MINNESOTA MEDICINE

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine, and Minneapolis Surgical Society

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PNEUMONIA IN MINNESOTA, WHAT CAN BE DONE ABOUT IT?*

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Minneapolis

FOR a number of years, health authorities have looked with apprehension upon the deaths from pneumonia and influenza with pneumonia complications. Pneumonia ranks fourth as the cause of death in Minnesota and sixth in the United States. Because of lack of available data, the Division of Vital Statistics of the Minnesota Department of Health has been unable to compile separate figures for bronchial and lobar pneumonia until the past five years.

The following table shows the reported deaths from pneumonia in Minnesota for the past five years.

TABLE I. DEATHS DUE TO PNEUMONIA IN MINNESOTA
1931 to 1935 Inclusive

Year	Lobar Pneumonia		Bronchial Pneumonia		Pneumonia Unspecified		Pneumonia (All Forms)	
	Total	*Rate	Total	*Rate	Total	*Rate	Total	*Rate
1931	923	35.7	976	37.8	51	2.0	1,950	75.4
1932	876	33.7	1,003	38.6	34	1.3	1,913	73.7
1933	741	28.4	835	32.0	50	1.9	1,626	62.4
1934	1,195	45.6	1,046	39.9	25	.9	2,666	86.5
1935	1,107	42.1	902	34.3			**2,009	76.5

*Rate per 100,000 population.

**1935 total does not include Pneumonia Unspecified.

From the table one may assume that approximately 1,000 of the deaths per year were due to pneumoccocus pneumonia as it is considered that 96 per cent of all lobar pneumonias and 3 to 5 per cent of bronchial pneumonias are caused by pneumococci. On this basis and considering that in large groups of cases† reported in the literature, it has been found that the fatality was 30 per cent, the number of cases of pneumococcus pneumonia in Minnesota would approximate 3,334 per year.

Pneumococcus pneumonias were formerly divided into four types, Types I, II, and III, each being an entity, and Group IV being made up of many different pneumococci, the characteristics of which were not well known. Twenty-nine different types of pneumococci have now been identified which formerly were included under Group IV. These organisms have been designated as Types IV, V, VI, et cetera, through XXXII.

Figures based on 9,639 cases collected from literature by Lord and Heffron[1] showed that Type I contributed 33 per cent of pneumococcus pneumonia; Type II, 23 per cent; Type III, 9 per cent, and Types IV to XXXII, 35 per cent, and that 17.5 of the 35 per cent of cases caused by types classified as IV to XXXII were caused by Types V, VII, and VIII.

Therapeutic serums have been developed which are effective in varying degrees in the treatment of Types I, II, V, VII, and VIII, which constitute 73.5 per cent of all pneumococcus pneumonias.

Table II gives an estimate of the number of cases of lobar pneumonia for one year due to the various types, the probable death rate with and without serum and probable number of lives which might have been saved had typing service and serum been available.

*From the Minnesota Department of Health.

†See footnote, Table II.

TABLE II.

	Cases	Deaths Without Serum	*Percentage	Deaths With Serum	*Percentage	Lives Saved
Type I	1,100	275	25	121	11	154
Type II	767	314	41	207	27	107
Type III	300	126	42	126	No serum	0
Type V	167	35	20.8	13	7.5	22
Type VII	167	63	38	17	10	46
Type VIII	250	45	18	14	5.4	31
Other Types	583	142	24.4	142		
Total	3,334	1,000		640		360

*Massachusetts Studies, Lord and Heffron, Cecil, Bellevue Hospital, N. Y. Cole, Rockefeller Hospital. Bullowa, Harlem Hospital. Finland, Boston City Hospital.

From Table II it may be noted that approximately 30 per cent of deaths occur without the use of serum and 19.2 per cent in the serum treated group.

Five years ago, Massachusetts[5] began a statewide program of pneumonia control. More recently New York State,[3] Connecticut,[4] Maryland[6] and Michigan[7] have initiated a similar plan. The essential phases of these plans have been to give publicity on pneumonia to the people through the radio, to physicians through local addresses, to offer laboratory service through state laboratories and to furnish nursing care and serum for indigent cases at least.

The funds of the Minnesota Department of Health have been so limited that it has been impossible up to the present to offer any of these services. Through the allotment of Federal funds it is now possible to offer limited services to aid physicians in the diagnosis and treatment of the pneumonias to the end that morbidity and mortality may be reduced. In doing this the Department of Health asks the coöperation and aid of the family physicians.

Proposed Laboratory Work

Typing of pneumococcus is being done by some of the larger hospitals in Minnesota and a few physicians throughout the State are carrying out typing, using the Neufeld outfit put out by some of the commercial houses. It is proposed that the Minnesota Department of Health Laboratories carry out typing of sputum, using the Neufeld technic and checking this, at least for some time, with the mouse and Sabin methods. While the Neufeld technic is very accurate in experienced hands, according to several investigators, this technic requires at least six months to one year of experience before it can be used proficiently. It is a direct method depending upon the swelling of the pneumococcus capsules upon the addition of specific antiserum. The great advantage of the Neufeld method over others (besides its low cost) is that an answer can usually be given to the physician in one-half to one hour after the sputum reaches the laboratory. Published data from the Massachusetts Department of Health Laboratories[1] show that correct typing may be carried out by this method in 94.6 per cent of Types I, II and III cases in which pneumococci are present in the sputum. In children and other patients who are not raising sputum it has been found by Bullowa in Types I and II cases that throat swabbings yield accurate results in 73 per cent of cases. The swab is incubated in broth two hours and the test then carried out. Experience has shown that typing can be done on properly collected sputum forty-eight hours after collection, but it has also been demonstrated that to be of definite value serum must be administered not later than four days after the onset of earliest symptoms of lobar pneumonia: cough, chill, rapid rise in temperature, and coincident pain in the side.

At a special meeting of the State Board of health, December 9, at which a member of the Council of the Minnesota State Medical Association was present, it was proposed that the Laboratories of the Division of Preventable Diseases of the State Department of Health offer pneumococcus typing for cases residing in areas in proximity to the Main and Branch Laboratories, and as soon as feasible extend this service further in the state. Preparation is already under way and it is expected that this service can be offered early in January, 1937. It is planned to

extend the work gradually by sending an experienced bacteriologist to various outlying districts to teach the Neufeld method of typing to technicians in local hospitals. In order that both the attending physician, the local laboratory, and the Minnesota Department of Health will have assurance that the results obtained are accurate, the Division of Preventable Disease will request that a sample of the sputum in each case be sent to the Main Laboratories so that the Neufeld test may be checked by the mouse method.

At the meeting mentioned above, it was also planned that a limited amount of Federal funds be allotted for the purchase of therapeutic pneumococcus serum for those unable to pay. Funds are not sufficient to make free serum available for all. This can be readily realized if one considers that there is an average of at least 1,000 deaths and an estimated 3,334 cases of lobar pneumonia in Minnesota each year.

As shown by figures above, 73.5 per cent of patients presumably can be helped by antiserum. Calculation from the above figures shows that 2,451 persons would supposedly be benefited by therapeutic serum. It has been shown by studies of large groups in this country and in England that an average of 80,000 units of serum should be given to the usual case without blood stream infection. At the prices now quoted boards of health, the minimum cost per patient would be $36.00 and the total for 2,451 patients $88,236.

In the early years of the Massachusetts pneumonia study one to two doses of bivalent Types I and II serum were given to a patient awaiting typing. This is still done in some New York City hospitals and is considered good medical practice. However, in consideration of the fact that experienced pneumonia specialists question the wisdom of this practice on the grounds that the administration of non-specific serum may actually do harm, and in consideration of the lack of funds, the Minnesota State Department of Health proposes that serum should only be made available for patients whose sputum is typed.

In developing the services to be offered under the above plan it will be necessary to study the incidence of pneumonia in Minnesota in its various forms, lobar, bronchial, influenzal, et cetera, as well as the bacteriologic study of each case, including typing the organisms in cases caused by pneumococci. In addition, a definite educational program should be instituted, emphasizing the dangers of the common cold and upper respiratory infections, and the necessity for consulting the family physician at the earliest possible moment. It would appear that what has been accomplished in the reduction of diphtheria in Minnesota can be done at least to some extent in pneumonia through the concerted effort of the family physician with the Minnesota Department of Health.

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THE INCIDENCE OF PNEUMOCOCCUS TYPES IN MINNESOTA*

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Minneapolis

THE proved value of specific immune antipneumococcus serum in the treatment of pneumococcus lobar pneumonia places a responsibility on the physician to provide his patient with the benefit of this form of therapy when necessary. Before serum can be used to advantage, however, it is absolutely necessary to determine the type of pneumococcus causing the pneumonia. No convincing evidence has as yet been presented to show that any serum except that prepared with the homologous type of pneumococcus is of specific value. In other words, Type I serum must be used only in Type I infection, Type II serum for Type II infection and so on. Typing of pneumococci has been so much simplified within recent years as to make it pos-

*From the Department of Medicine, University Hospital, Minneapolis.

TABLE I. DISTRIBUTION OF PNEUMOCOCCUS TYPES IN VARIOUS PARTS OF THE WORLD

Observers		Kohl and Reitzel	Gundel and Seitz	Sutliff and Finland	Bullowa	Wu and Zia	Percentages	Grand Total
Location	Minnesota	California	Germany	Mass.	New York	China		
Types								
I	84	138	18	302	253	..	20.3	795
II	20	39	17	157	79	..	8.0	312
III	23	27	145	153	115	..	11.8	463
IV	14	3	109	16	65	4	5.4	211
V	27	5	3	48	60	15	4.0	158
VI	13	2	149	14	29	18	5.7	225
VII	14	14	35	48	69	2	4.6	182
VIII	19	8	50	68	98	10	6.4	253
IX	5	1	37	15	25	10	2.4	93
X	1	2	92	30	8	12	3.7	145
XI	1	1	52	14	6	8	2.1	82
XII	1	1	4	8	14	4	.8	32
XIII	4	0	7	6	8	7	.8	32
XIV	5	4	4	20	45	11	2.3	89
XV	0	1	1	5	1	5	.3	13
XVI	10	2	1	2	4	4	.6	23
XVII	3	1	23	7	8	3	1.2	45
XVIII	1	1	155	31	24	4	5.5	216
XIX	6	0	48	6	16	9	2.2	85
XX	5	1	30	13	11	5	1.6	65
XXI	3	2	12	0	13	2	.8	32
XXII	8	0	59	0	16	3	2.3	86
XXIII	0	0	14	0	3	14	.8	31
XXIV	1	0	6	0	3	2	.3	12
XXV	1	1	12	0	2	1	.4	17
XXVI	0	0	0	0	0	0	0	0
XXVII	1	0	2	0	2	1	.2	6
XXVIII	0	0	26	0	9	1	.9	36
XXIX	1	0	44	0	5	2	1.3	52
XXX	6	0	16	0	2	0	.6	24
XXXI	0	0	10	0	3	1	.4	14
XXXII	0	0	1	0	4	0	.1	5
IIA	0	6	0	0	0	0	.2	6
Unclassified	0	62	3	0	0	4	1.7	69
Total	277	322	1,185	963	1,000	162	100.0	3,909

sible and reliable in the average laboratory. With the so-called Neufeld technic, type determinations can often be made within a few minutes.

Until recent years only those cases which conformed to the classical clinical entity of lobar pneumonia were regarded as amenable to serotherapy, probably because the great majority of cases of this form are due to Types I and II pneumococci. Newer knowledge has rendered it obligatory that the causative organism be determined in every case of acute pulmonary infection. In the first place, Types I and II pneumococci occasionally incite atypical or bronchopneumonia and many of the higher types of pneumococci may cause typical lobar pneumonia. Other organisms such as the hemolytic streptococcus and the staphylococcus may also cause either the lobar or the broncho- form of pneumonia. It is, therefore, desirable and necessary for purposes of specific therapeusis to regard all cases of pneumonia from an etiologic rather than a clinical or anatomic point of view. Antipneumococcus serum for Types I, II, V, VII, and VIII are commercially available and easily administered; Type IV, VI, and XIV sera will soon be obtainable. Other type serum will no doubt be developed when the prevalence of infection of any given type is great enough.

Because of the continued development of antipneumococcus sera for the higher type of pneumococci, it was thought desirable to determine the distribution of pneumococcus types which caused pneumonia in Minnesota, to ascertain the types most prevalent, and to compare the incidence with data gathered from other parts of the world. Since the object of this study was chiefly to determine type incidence, discussion will be limited to this aspect. Samples of sputa were obtained chiefly from adult pneumonia patients in the University Hospital and from private patients of physicians from various parts of the state, and typed by the mouse method or the Neufeld method. During a period of three

years there was no appreciable difference in the distribution of the various types during any one-year period as compared with the other one-year periods. Similarly, the distribution of types in the series of cases which were admitted to the University Hospital was comparable with the series in which the sputum was sent to the hospital for typing. The incidence of types found in 277 sputa during this three-year period is shown in the table. In common with the data of others, Type I was most prevalent. Type V, however, exceeded Type II in prevalence. Types I to VIII were apparently responsible for 77 per cent of cases in this study. Otherwise with few exceptions the type incidence is quite similar to that reported from Germany, China, and various parts of this country, as shown in the accompanying table. The inclusion of Gundel's series in which he isolated pneumococci from the nasopharynx of 1,185 healthy school children in Heidelberg affects the grand total of the lower types, namely, I to VIII. His figures are included in the table to show the relative frequency of various types in healthy carriers. Of the 3,909 reports of typings collected, Type I is the most prevalent with 20.3 per cent, Type III second with 11.8 per cent, and Type II third with 8.0 per cent. Types I to VIII make up 66.2 per cent of the total. Type XXVI is the only type which has not been isolated by any of these observers mentioned. The world-wide uniformity of pneumococcus type distribution is indeed remarkable.

The type distribution in pneumonia patients determined in this study may serve to give an approximate idea of distribution of pneumococcus types, especially those from Types III to XXXII, among healthy carriers. Gundel's studies have shown that the incidence of the higher types of pneumococci among healthy carriers and in pneumonia patients is similar. His studies further indicate that pneumonia due to the higher types is most often endogenous in origin in contrast with typical pneumonia due to Types I, II, and III.

Comment

The distribution of pneumococcus types causing pneumonia in a small group of cases in Minnesota was found to be similar to that in other parts of the world. Types I to VIII were responsible for 77 per cent of the cases, as compared with 74 per cent according to Kohl and Reitzel, 84 per cent according to Sutliff and Finland, and 77 per cent found by Bullowa. The availability of specific immune sera for most of these types renders it necessary to type the pneumococcus in the sputum of all patients with pneumonia to determine the causative organism and to administer appropriate specific antiserum for the given types of infection.

We wish to acknowledge with thanks the technical assistance of Miss Cecelia Kramer in the study of this problem.

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THE NEW INSULIN*

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A CAREFUL trial of protamine insulin has been conducted by a number of clinicians[4, 5,8,10-14,16-18,21-23,25] and almost without exception those who have used it speak favorably of it. The material still is unavailable commercially, but this soon will be remedied. The preparations now at hand probably are less satisfactory than others that later may be developed. Nevertheless, they represent a real advance and thus the topic is of importance and one with which the general practitioner soon must familiarize himself.

It is my belief that the greatest good from medicine to the greatest number of patients is accomplished only when methods of treatment become simplified. Not until then do they become useful to the physician in general practice, who must carry the burden of treating the large majority of the sick. This, particularly, is true in diabetes and in so far as the new insulin now complicates the treatment of this condition, its introduction in a sense is regrettable. Physicians were just beginning to learn how to use regular insulin. I believe, however, that protamine compound ultimately will simplify the management of diabetes. Occasional patients, particularly youthful patients, always have been difficult to control successfully and have presented problems which, frequently, even the specialist failed to solve. There will be fewer failures with longer acting insulins. The very great care required for the planning and measuring of the diet has made the treatment of diabetes exceedingly irksome for physicians with little experience in dietetics or little time to teach their patients. The new insulin promises to make rigid control of the diet somewhat less necessary.

Varieties of New Insulins

My title "The New Insulin" is not well chosen, because already several varieties of new insulin have appeared, and, as I said before, further developments are in prospect. The Hagedorn insulin is prepared by the addition to regular insulin of protamine obtained from the sperm of certain varieties of salmon. The advantage of protamine insulin is its slow hypoglycemic action, a consequence of slow absorption. Beecher and Krogh have made direct observations, by means of a Sandison-Clark chamber inserted in rabbits' ears, of insulin precipitated at its isoelectric point and of protamine insulin. They recorded that while almost all traces of insulin had disappeared after forty-five minutes, protamine insulin took five hours to disappear so completely.

The observations of Drs. Scott and Fisher, of the Connaught Laboratories in Toronto, that the addition of certain metals to insulin extends its activity has proved applicable, likewise, to the protamine compound. The addition of zinc to protamine insulin increases still further its hypoglycemic action. It also increases the stability of the compound. At present either calcium or zinc is being added, to secure greater stability. The amount of calcium in the preparation coming from the Eli Lilly Company is either 1 or 2 mg. for each 100 units of insulin; the amount of zinc is 1 mg. for each 500 units. The effect of adding calcium, as presently I shall show, is to shorten slightly instead of lengthening the action of the compound (Fig. 1). In the meantime, Doctor Melville Sahyun, of Frederick Stearns and Company, has prepared a solution of crystalline insulin that has an action which is considerably prolonged, as compared to the action of regular insulin. Doctor Scott, in his excellent investigation, had discovered that the presence of traces of zinc or other metals was necessary in order to crystallize insulin. The zinc in Sahyun's preparation may explain its longer action, but much less zinc is contained than that which the Toronto investigators found to be necessary to prolong the action of ordinary insulin, and, therefore, Sahyun has supposed either that a chemical reaction has occurred in his preparation between the insulin molecules and the zinc used for crystallization, or that racemization has taken place within the large protein molecules of insulin, whereby different characteristics have been imparted.

Clinical observations with crystalline insulin

*From the Department of Medicine, The Mayo Foundation, Rochester, Minnesota. Read before the meeting of the Academy of Medicine, Rochester, New York, October 1, 1936.

have been made and reported by Altshuler and Leiser, by Rabinowitch and his associates, by Freund and Adler, and by Mains and McMullen. A disadvantage, to my mind, is that the duration of its action is not sufficiently prolonged.

One more new insulin may be mentioned, namely, insulin tannate. This has been prepared by Bischoff, and a clinical study of patients treated with it has been reported by Gray. A suitable solution of tannic acid is added to commercial insulin of U 100 strength so that the resulting mixture contains 3 mg. of tannic acid for each 100 units. The addition must be made immediately before injection. A delayed and prolonged hypoglycemic action was obtained with this material so that fewer doses per day and a smaller total number of units sufficed to control glycosuria. The advantages claimed are the cheapness and ready availability of tannic acid. A disadvantage would be rather frequent development of erythema and painful subcutaneous swellings at the sites of injection.

Doubtless, other means will be found for prolonging the hypoglycemic action of insulin. Among those reported to date, none appear to be so satisfactory as that involving the addition of protamine to insulin with or without added calcium or zinc, and, therefore, it is principally of preparations of protamine insulin that I shall speak.

Patients Pleased

At the clinic, our experience with the new insulins began last January, on the receipt, from Professor Hagedorn and his associates, of some protamine prepared in his laboratory. Continuously since then, material has been received from the laboratories of the Eli Lilly Company. Eighty-three patients had been treated with this product up to September 13, 1936. They comprised twenty-two children and sixty-one adults. The youngest individual was aged six months, the oldest was seventy-seven years of age. In forty-eight of these cases, the administration of protamine insulin has been continued. In thirty-four cases, the administration was discontinued before the patients were dismissed from the clinic. It was our early policy to continue treatment with protamine insulin only when the patients lived close at hand, while in some cases its continued use was prevented because patients were obliged to leave the hospital before they had been trained sufficiently well. We now believe that nearly all of our diabetic patients who require any insulin will be dismissed from the clinic using protamine insulin as soon as this becomes available commercially.

Only one patient whose treatment was well started with protamine insulin has gone back to the use of the regular preparation. This is a young woman who, being a dietitian, has been able to maintain splendid control of her disease. She required 60 units of regular insulin in two divided doses. At first, she was pleased with protamine insulin, but later she experienced unusual difficulty in recognizing the onset of reactions. In consequence, she was unable to tell when to take sugar to protect herself from slipping into a state of irrationality. In this case, also, the requirement of insulin regularly fell at the onset of each menstrual period and when protamine insulin was used a sufficiently prompt readjustment of dosage was difficult to make and severe episodes of hypoglycemia occurred. Allen reported the case of a taxicab driver who was unable, when using protamine insulin, to avoid trouble from reactions which previously, with multiple doses of regular insulin, he had successfully avoided for years.

The remainder of our patients are pleased with protamine insulin and for the most part would be badly disappointed if they had to give it up. One of them, at our request, wrote to a number of the others—"as one diabetic to another"—in order to obtain frank expressions of opinion from them. He chose seventeen individuals who had returned to their homes and had been taking protamine insulin for more than three months. The dietitian was one. Her reply was unfavorable. The comments of the others were favorable and the majority were enthusiastic. These particular patients had been selected for our early observations because they had severe diabetes; many of them were sensitive to insulin and frequently had reactions which alternated with severe hyperglycemia. At present, with protamine insulin, their diabetes is by no means perfectly controlled. Nevertheless, they feel healthier, they are pleased to have to make fewer injections each day and that the total number of required units is less than it was. Since they are well satisfied, it is obvious that patients who require a smaller number of units and those who

are resistant to insulin are pleased. One of the latter is a man, aged sixty-five years, who, for ten years, has used 90 units of regular insulin in three different doses. Now, 60 units of protamine zinc insulin administered in one dose before breakfast prevents glycosuria. This gentleman recently commented with grateful enthusiasm that he would be taking 700 less injections each year.

A Saving in Units; Fewer Injections Needed

Before treatment with protamine insulin, the average daily units of regular insulin taken by the forty-eight patients who are continuing to use protamine insulin was forty-five. With protamine insulin, the average daily number of units required was 40.4, but accessory doses of regular insulin were used by a number of these individuals and the average daily units of the latter were 8.5. These figures seem to belie the statement made previously by myself and others that a saving in units is accomplished through the use of protamine insulin. The figures, however, fail to tell the whole story. Many of the patients, before using protamine insulin, received two little regular insulin to be free from urinary sugar, whereas afterward the control of their diabetes was more satisfactory. Also, since protamine insulin has been placed at our disposal, we have permitted the use of a diet richer in carbohydrate than we formerly considered desirable. The diet was increased in its content of carbohydrate in twenty-two of the forty-eight cases. Thus, a relative saving of units undoubtedly has been accomplished. In nearly all the cases where the diet was not changed, an actual saving of from 10 to 40 per cent ultimately has been obtained.

The average number of injections given these patients before protamine insulin was used was 2.6. The average number of injections of protamine insulin has been 1. When accessory injections of regular insulin were administered, they usually were given at the same time in the morning. In a few cases, accessory regular insulin was also used in the afternoon. The average number of injections of accessory insulin was 0.76, a figure which probably will be smaller in the future because in most of these cases plain protamine insulin was used. Rabinowitch[17] reported that he rarely has had to use any accessory regular insulin and that he is obtaining satisfactory control in most cases with one dose daily of the Connaught protamine zinc insulin. Our recent experience with Lilly's protamine zinc insulin is similar.

The Healthiness of Patients Improved

It is interesting that many patients say that they feel healthier while using protamine insulin. This is readily explained in cases where better control of glycosuria has been obtained, but it also is true of the older individuals whose glycosuria previously was well controlled with not more than two injections daily of regular insulin. Possibly the more continuous action of protamine insulin is responsible. Even multiple administrations of regular insulin leave intervals when the patient is without the benefit of insulin. In this connection, Rabinowitch[16] observed diminution in the serum bilirubin of patients taking protamine insulin. In one group of cases, the value for the bilirubin was 1.26 mg. per 100 c.c. of serum before administration of protamine insulin and 0.35 mg. per 100 c.c. afterward. He also found that the value for the cholesterol was diminished in patients who showed any elevation of the cholesterol of the plasma on previous treatment with regular insulin. Joslin and his associates, and also Smith, have commented on the improved health of patients and, recognizing the theoretical advantage of having a continuous supply of insulin as provided by the protamine compound, Joslin has expressed the hope that the degenerative complications of diabetes will be prevented. Hanssen has reported that enlarged (fatty?) livers, observed in diabetic children and young adults diminished in size after a period of treatment with protamine insulin. Winnett has reported a similar observation in the case of an adult, as also has Bowcock. This, in my experience, has also been observed after satisfactory treatment with multiple doses of regular insulin.

No Ill Effects from Protamine Insulin

Ill effects from protamine insulin have been conspicuous by their absence where the doses used were not excessive. Local redness or swelling at the sites of injection have been missing except in two cases, in which the sensitivity presumably was to pork and not to the protamine. The patients previously had been obliged to use a special insulin made from beef pancreas.

Apprehension has been expressed that continuous treatment with a material containing even a small amount of zinc ultimately might be injurious. This metal, as I have told, is now added to the preparations. There is little reason for such apprehension. The dose of zinc is limited to 1 mg. for 500 units, an amount which probably is smaller than that obtained from foods and cooking utensils. The body readily excretes zinc, as is shown by the failure of zinc to accumulate in the blood of workers who for years have been exposed to the fumes of zinc. I am indebted to a recent paper by Rabinowitch and his associates for this information. Zinc, they said, has been added to the rations of animals observed through three generations, without producing deleterious effects.

I mentioned before that both zinc and calcium have been added to protamine insulin to stabilize the precipitated mixture. Calcium is less effective than zinc as a stabilizer. In a number of cases, patients or nurses have returned bottles of protamine calcium insulin with the normal flocculant precipitate changed to a granular precipitate and adhering to the sides of the bottle. It never has happened with the zinc compound. Also, zinc lengthens the hypoglycemic action of the protamine insulin, which, in my opinion, is advantageous, whereas calcium shortens this action (Fig. 1).

Hypoglycemic Reactions

The subject of hypoglycemic reactions is one which most of those reporting on protamine insulin have minimized. One of my assistants, himself a diabetic, deplores this optimism. The insulin reaction, even if trivial, now is the principal bugbear of diabetes. As one man expressed it: "I don't have diabetes any more, I have insulin reactions."

The action of protamine insulin is so much slower in its development than that of regular insulin that symptoms frequently are avoided, even when the amount of dextrose in the blood has fallen to hypoglycemic levels. For example, in one of our early observations at the clinic, a young man with severe diabetes was given 50 units of protamine insulin and his blood sugar remained constantly at 50 mg. per 100 c.c. for the last twenty-seven of thirty-eight hours of fasting. Another young man with diabetes of severity was given 70 units of protamine insulin and his blood sugar remained in the neighborhood of 50 mg. per 100 c.c. for the last forty of fifty-seven hours of fasting (Fig. 2). In neither of these cases were there any noteworthy symptoms until the very end of the period of ob-

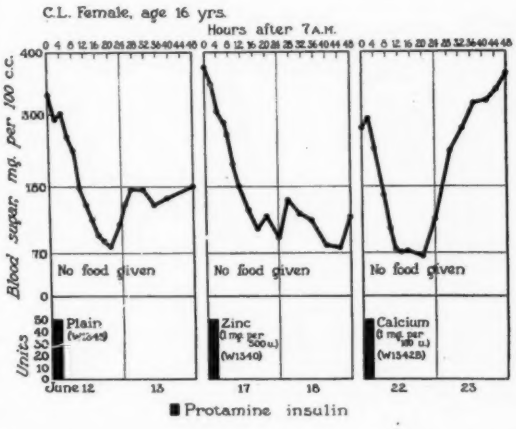

Fig. 1. Hypoglycemic effect of equal doses of plain protamine insulin, zinc protamine insulin and calcium protamine insulin.

servation, but finally in both cases exaggeration of tendon reflexes occurred, with mental confussion and headache. Administration of dextrose did not relieve these abnormalities for several hours. Such hypoglycemia probably is quite undesirable even in the absence of symptoms. Doctor Bollman, by giving protamine insulin to dogs, in sufficient doses to maintain long-continued lowering of the blood sugar, has observed that the animals may manifest no symptoms other than drowsiness for fifty or sixty hours and then may suffer from convulsions and die. Dextrose, if administered too late, will not protect such animals; indeed, frequently, its administration precipitates the convulsion. Animals dying after these experiments showed multiple petechial hemorrhages scattered through the brain.

While the symptoms of hypoglycemia usually occur less frequently with protamine insulin, exceptions occur and in some instances the reactions encountered have been more annoying than those commonly seen with regular insulin. The symptoms differ from those of regular insulin by the absence usually of those manifestations which have been attributed to the protective discharge of epinephrine. The blood sugar falls so gradually that the suprarenal glands apparent-

ly are not aroused. I refer to tremors, sweating, tachycardia and pounding pulses. In the hypoglycemia after protamine insulin, the first effects are referable to cerebral disturbances. Drowsiness, headache and nausea are observed, or, at first, there may be nothing more than a vague feeling of fatigue which cannot be differentiated from fatigue from other causes. It is followed by increasing weakness and then by a little numbness about the mouth or at the ends of the extremities. These symptoms are easily recognizable, in most cases, but the patient must be taught to attend to them before increasing drowsiness and mental dulness make him incompetent. Drowsiness, when it first appears, may escape detection, particularly if the patient is busy in the performance of a task requiring physical activity. The principal difficulty, without question, is the early effect on the mind, which interferes with the patient's judgment and leads him to neglect taking precaution to avoid further trouble. Later, he not only is unable to help himself but actual negativism develops and he resists the attempts of others to help him. Finally, the signs of the disturbance become more apparent; the drowsiness increases or in some cases euphoria develops, or delirium or muscular incoördination, with twitchings of muscles, contortion of the face, or actual convulsions.

It is not true, as several writers have suggested, that severe reactions are not encountered after injections of protamine insulin. A few patients have wakened in the morning with sore, stiffened muscles and bitten tongues as evidence of nocturnal convulsions, and two attacks of convulsions have been observed in the daytime in the hospital.

Patients have stated that the early symptoms of hypoglycemia after administration of protamine insulin may be indistinguishable from those they have learned to associate with hyperglycemia and acidosis. This probably is because of the nausea which occurs not infrequently. One woman refused to eat her evening meal because of nausea and insisted that acidosis was developing. The nausea usually disappears shortly after quickly absorbable carbohydrate has been eaten. We have not seen vomiting among conscious patients, but it has occurred in cases in which patients had reactions in their sleep.

Symptoms suggesting slowly reversible changes in the central nervous system persist after the severe reactions. Such symptoms are: amnesia, headache, tremor, dulling of the sensation of taste, and exaggerated tendon reflexes.

Another complication encountered more regularly with protamine insulin is the hypoglycemic effect of muscular exertion. This adds to the difficulty of treatment because it either necessitates careful regulation of the amount of exertion, so as to keep it constant from day to day, or demands the administration of extra carbohydrate before and after the exertion, to neutralize the depressing effect of the exercise on the blood sugar. Many of the severe night reactions to which I have referred followed afternoon swimming or a long game of golf.

Injection of Protamine Insulin an Imperfect Substitute for the Normal Pancreas

The flocculent precipitate resulting from the addition of protamine to insulin hydrochloride is relatively insoluble in the tissue fluids. It has been supposed that its preliminary breakdown is necessary before the insulin of this compound is absorbable into the blood. The injected material serves as a depot; from it, insulin enters the blood presumably at a constant rate rather than by adjustment to the needs of the body. Normal pancreatic islands supply insulin intermittently as is required at the time. Tumors of the pancreatic islands are not provided with normal nerves and their activity is thus not regulated to conform to the needs of the body. Patients receiving protamine insulin behave very much as do those with island tumors, both in their tendency for reactions to develop in the night when the interval between feedings is long, and in their hypersensitivity to the hypoglycemic action of exercise.[24]

On the other hand, there is a degree of adjustment of the rate of exhaustion of the insulin in the injected depot of protamine insulin so that at times, when food is entering the body, insulin either is liberated more rapidly, or, having reached the blood, comes into action sooner than it does when the organism is fasting. I offer the following experiments in evidence of it.

One hundred thirty-two units of protamine insulin containing 1 mg. of calcium per 100 units were injected subcutaneously into a patient with severe diabetes. At the same time, a twelfth of the day's allowance of food was given by mouth. The same feeding was repeated there-

after at two-hour intervals, so that the intake of food was practically continuous. It consisted of an appropriate mixture of milk, cream and karo syrup, the allowance of carbohydrates, fat and protein for each twenty-four hours being

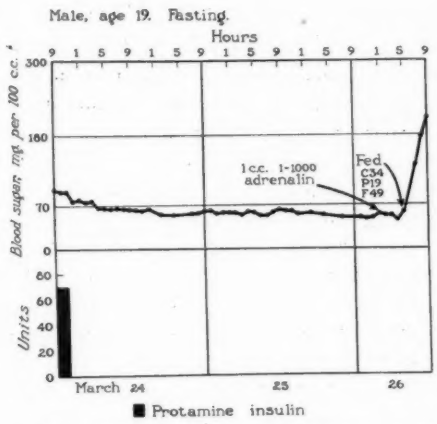

Fig. 2. Values for blood sugar in case in which patient fasted fifty-seven hours after administration of protamine insulin.

the same as the patient previously took in three mixed meals. The dose of protamine insulin represented one and a half times the patient's customary daily dose of regular insulin. The reason for the larger number of units was to provide enough active insulin in the first twenty-four hours to equal the previous dose of regular insulin. As I later shall explain, the effect of protamine insulin is not all exerted the day of its administration (Fig. 3).

Observations started at 7 a. m. At this "zero" hour, the patient had fasted since the evening meal of the day before and the last previous injection of insulin (regular insulin) had been given ten hours before. The value for the blood sugar at the "zero" hour was 328 mg. per 100 c.c. It fell gradually, reaching physiologic values at the fourth hour and hypoglycemic values later; it then rose equally gradually to pass the "zero"-hour level before the twenty-fourth hour. After twenty-four hours, the excretion of nitrogen was increasing, acetone bodies were accumulating, and the carbon dioxid combining power of the plasma was decreasing.

This observation is to be compared to another made of a patient who fasted. He had received 70 units of plain protamine insulin each morning for several days before; the dose which just held his blood sugar in the normal range. In this case, at 7 a. m., the "zero" hour, the usual dose of protamine insulin (70 units) was given, but food was withheld. The value for the blood sugar was at the physiologic level of

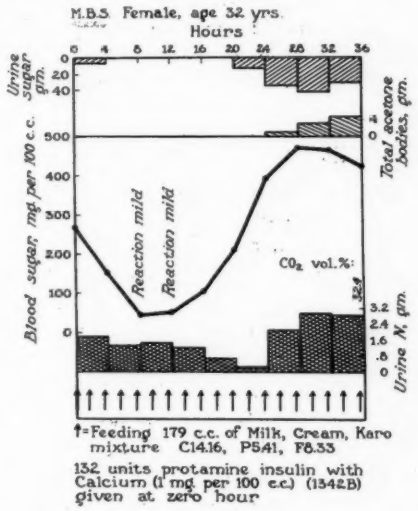

Fig. 3. Values for blood sugar and other data after administration of protamine insulin.

100 mg. for each 100 c.c. It fell gradually into the hypoglycemic zone and remained there for fifty-seven hours, when feeding was resumed. The patient in this second case had diabetes of severity as was shown on another occasion when a dose of 70 units of regular insulin followed by fasting did not sustain a low blood sugar for more than a few hours and was followed in twenty-four hours by intensive glycosuria and acidosis (Fig. 2).

I interpret these results to mean that the protamine insulin in the first case was more rapidly exhausted. Activity of insulin was no longer evident after twenty-four hours, as was apparent from rapidly developing acidosis. In the second case, after fifty-seven hours, there was still a sufficient insulin effect to keep the value for the blood sugar in the neighborhood of 50 mg. per 100 c.c. and to prevent acidosis.

It seems probable from this and other observations that a quantum relationship exists between insulin and its substrate dextrose, and that with more dextrose to be acted on in a given time, more insulin is exhausted. Possibly, in both of the observations recorded, all of the

insulin had left the site of injection hours before its activity was lost, but if so, it must have been distributed elsewhere in secondary depots from which, in the first case, where more dextrose was present, it was released more rapidly. Thus, in a sense, an injection of protamine insulin does supply insulin more or less rapidly, depending on the demand for it, and to this limited extent, a depot of injected insulin behaves like the normal pancreas.

The Duration of Action of Insulin

Protamine insulin injected once each twenty-four hours into patients receiving food is cumulative in its action for a period of at least three days; the full effect of a given daily dose does not become apparent until the end of the third day. Thus, it regularly happens when patients who previously have used regular insulin are abruptly changed to equivalent daily doses of protamine insulin, the urine shows much sugar on the first day, less on the second day, and much less or none on the third. Similarly, if a given daily dose of protamine insulin is either increased or decreased, the full effect of the change in the number of units is not entirely apparent before the third day. Quantitative information here is not available, but from the effect on the sugar of the blood and urine, it is my impression that only about 50 per cent of the amount of protamine insulin injected in one day exerts itself that day, leaving 50 per cent to be used, of which perhaps half acts the second day and the balance the third day. If this is true, one ought to be able, in cases of mild diabetes, to obtain satisfactory management with one injection every two days. In a case of moderate diabetes, in which the patient was a girl, eighteen years of age, who had been a diabetic for five years, the diabetes had been controlled satisfactorily with 30 units of protamine zinc insulin administered before breakfast. The patient was given 50 units. A mild reaction occurred the following morning, but otherwise the patient was comfortable and the value for the blood sugar remained within the physiologic range for forty-eight hours. It stood at 80 mg. per 100 c.c. at the end of forty-eight hours. The diet had not been discontinued; it consisted of 177 gm. of carbohydrate, 72 gm. of protein and 145 gm. of fat. Again, 50 units was given with similar results. The observation, to my mind, is encouraging, promising, I hope, that with an insulin even more prolonged in its hypoglycemic action, successful treatment may ultimately be accomplished with injections spaced at intervals of several days.

Patients Difficult to Stabilize with Protamine Insulin

A few of the patients observed at the clinic, particularly those with diabetes of long duration and who had been treated with regular insulin for many years, have been difficult to stabilize at first on protamine insulin. Some of them have taken several weeks before becoming nicely adjusted. This also has been the experience of Bertnard Smith, who suggested the possibility that "a glycogenic function that has become somewhat adjusted to the more acute effect of regular insulin may be slow in adaptation to the more gradual effect of the protamine preparation." The subject should be emphasized in order to avoid unnecessary discouragement when an early result with protamine insulin is unsatisfactory.

Some part of this difficulty may be explained by changing types of protamine insulin used to date; also, occasional lots have been less potent than others, but I am reasonably well satisfied that these are not the entire explanation and that Doctor Bertnard Smith has recognized something more fundamentally significant in this sensitiveness of certain patients to the change from regular to protamine insulin.

The Treatment of Ambulant Patients with Protamine Insulin

When protamine insulin was first used at the clinic, former patients who had diabetes of established severity were called in and asked to serve as subjects for its clinical testing. They were placed in the hospital and closely supervised by means of repeated analyses of the blood for sugar.

With this experience at hand, we began the treatment of ambulant patients by using nothing but fractional tests of the urine as a guide to the adjustment of the requirement of insulin. Our results are encouraging. By adopting certain simple rules, we have encountered no serious difficulties. Our procedure at present is as follows:

Patients who previously have been receiving

multiple doses of regular insulin are served their meals in the diet kitchen and the doses of insulin are adjusted as accurately as possible. Patients who previously have not used insulin, unless their diabetes is very mild or very early, are taught the use of regular insulin, the planning of meals, and the testing of urine. Daily visits are required with reports on the tests of the urine. Four of these tests are asked for daily, one before each meal and one at bedtime. The diet which we prescribe is one providing from 140 to 160 gm. of carbohydrates.

When we are satisfied that the dosage of regular insulin is approximately correct, we start giving the protamine compound; on the first day we inject as many units of protamine insulin as the units of regular insulin found necessary before, and, in addition, give four-tenths the number of units of regular insulin. The protamine compound is administered in the morning shortly before breakfast. The regular insulin is given at the same times of day as it was before. For instance, if the dose and distribution of regular insulin before was 30, 10, 20, and 10 units, we now give 12, 4, 8, and 4 units. If it was 20, 0, 10, we give 8, 0, 4. The second day, the same dose of protamine insulin is administered but the doses of regular insulin are made to equal two-tenths of what they were originally. On the third day, regular insulin is omitted. From this point on, many patients require no more regular insulin. In cases in which the diabetes is more severe, it has not been possible for us to obtain complete control of glycosuria without supplementary doses of regular insulin, but almost always the number of these has not been more than two.

The patient, in the meantime, has received implicit directions on the subject of reactions and their antidoting. We now are using loaf sugar to control hypoglycemia. If this is allowed to dissolve in the mouth, its inversion and absorption proceeds rapidly enough to control early symptoms quickly, yet because inversion is necessary before absorption occurs, the effect is more prolonged than that of solutions of dextrose like orange juice. The patient is instructed always to carry loaf sugar on his person and to take one loaf at the first suggestion of any unusual symptom and another loaf every thirty minutes thereafter so long as symptoms persist or recur. It is advised that a companion sleep in the room, to be ready to help if nocturnal reactions occur. No unusual physical exertions are permitted until the new regimen is fully established and experience has been obtained in the recognition of reactions and their treatment. Later, when strenuous exercise is undertaken, the patient is advised to eat two loaves of sugar before and afterward. When the control is satisfactory, the number of urinary tests is reduced to two a day, one before breakfast, the other at some other time of the day; the tests are preferably performed at different times on different days. Finally, when all is well, one test before breakfast suffices.

One Dose of Protamine Insulin a Day

At the clinic, we now are satisfied that the best time of day to give protamine insulin usually is in the morning before breakfast and that administering more than one dose in twenty-four hours rarely is necessary. We[22] already have published some reasons for this. The peak effect of an injection of zinc protamine insulin is reached about eight hours later and the most advantageous time for this to occur is in the middle of the afternoon when the amount of blood sugar has been raised by the two preceding meals. Another good reason is that by this technic, the test of the urine made before breakfast becomes a very accurate gauge of the tolerable dose of protamine insulin. Tests at other times of the day reflect the hyperglycemia provoked by meals and we repeatedly have observed that postprandial glycosuria may occur even when the dose of protamine insulin is large enough to provoke a reaction at night. When the test in the morning shows sugar, one is informed that the dose of protamine insulin is inadequate and can be increased with safety. When this test shows no sugar, one knows that the dose has been large enough and the question then is whether it is too large. A reaction in the night is evidence of excess, but it is not wise to wait for reactions and our present rule is to reduce the dose by 5 units when three successive days have passed with morning urines free from sugar. Because of the three-day action of protamine insulin, changes in the dose are not made more frequently than every third day except when the necessity for smaller dosage is indicated by the occurrence of a reaction.

Accessory Regular Insulin

With protamine insulin given as I have described, glycosuria after meals occurs only in cases of severe diabetes. To combat such postprandial glycosuria, quick acting regular insulin is given in the morning with the protamine insulin, but in a different site, and, if necessary, it is given separately before supper. More than five or ten units are rarely needed. At the clinic we have found the Stearns solution of crystalline insulin to be very useful for this purpose. Its action is quick enough to provide for the hyperglycemia after breakfast and yet is prolonged enough also to provide for that following the noon meal. Possibly, such accessory insulin is unnecessary. Short periods of hyperglycemia after meals may be harmless. Patients are made less aware of them by symptoms than they usually are aware of periods of hyperglycemia that occur when regular insulin alone is being used. At present, we are disregarding traces of sugar in the urine during the daytime, but advising the use of accessory doses either of regular insulin or of Stearns' crystalline insulin when the tests before the noon and evening meals are strongly positive.*

Cases of Early Diabetes

In cases of mild diabetes, it is possible to begin treatment at once with injections of from 10 to 30 units of protamine insulin. In cases of very early diabetes with sudden onset of symptoms, the administration of protamine insulin may prove to be of the greatest possible value. The patients in such cases, for the most part, are children or young adults. The onset of their disease is often as abrupt as that of an acute infection. Polyuria and extreme thirst appear over night and very quickly attract attention; if treatment is withheld, dehydration rapidly follows, and acidosis and coma develop. I once saw a child with fatal coma five days after such an acute beginning. A characteristic of these cases of early diabetes is that the patients respond very rapidly to treatment, even to very little treatment. Their symptoms then disappear and afterward for many months they may show a steadily rising tolerance. They may even seem to have wholly recovered, but woe unto the doctor who places great reliance on this recovery. It happens almost always within twelve to twenty-four months that the tolerance falls again and thereafter much more intensive treatment is required to maintain control of glycosuria. It always has seemed to me that in cases like this the condition would be curable if treated well and intensively from the beginning and in many of these I have tried with all means available to prevent the inevitable relapse. I have rarely succeeded, but hope springs eternal, and I hope now, with the possibility of continuous protection offered by this long acting insulin, that better results can be obtained. Therefore, at the clinic, we now are giving 10 to 15 units of protamine insulin daily in such cases of juvenile diabetes with the hope that the more continuous protection of the pancreas afforded by this means will accomplish more than previously has been possible by using mutiple doses of regular insulin.

Treatment of Emergencies

The treatment of coma and of the acute emergencies of diabetes such as accompany infection or are provoked by fracture of bones or by surgical procedures would seem to call for a quicker acting insulin than the protamine compound. However, while the principal demands may need to be met by regular insulin, the supplementary use of protamine insulin has seemed to be very helpful. We have resorted to this in seven cases of diabetic acidosis and in the postoperative treatment of fourteen surgical patients, and have been gratified with the results. In the case of acidosis, our procedure has been to inject immediately 50 to 100 units of protamine insulin and thereafter to treat the patient in a conventional manner, with multiple doses of regular insulin. Very small amounts of regular insulin have been required. We have not had the courage to depend exclusively on protamine insulin in cases of diabetic acidosis, but Rabinowitch and his associates reported recently that they have done so in two cases and that the results were remarkably favorable.

Conclusion

In concluding, I would like gratefully to acknowledge that what I have recorded, in this effort to evaluate the usefulness of the new preparation of insulin, represents the joint efforts of

*Zinc insulin, that is, regular insulin to which zinc has been added so that 500 units is accompanied by either 1 or 2 mg. of zinc, can be used as effectively as the solutions of crystalline insulin.

a group of us which includes my associates, Dr. E. J. Kepler and Dr. E. H. Rynearson of the Department of Medicine, Dr. A. E. Osterberg and his assistants of the Department of Biochemistry, Dr. J. L. Bollman, of the Department of Experimental Surgery and Pathology, together with Drs. R. G. Sprague, B. B. Blum, J. W. Annis, E. F. Rosenberg and B. M. Clark, Fellows in Medicine, of The Mayo Foundation. The assistance of Miss Mary Foley, Sister Mary Victor and other dietitians and nurses of the St. Mary's and Kahler Hospitals is also gratefully acknowledged.

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A CASE OF CHORDOMA WITH A HITHERTO UNOBSERVED INTRASPINAL EXTENSION*

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THE development of our knowledge of neoplastic formations originating from the notochord is not without interest. The first observations were made on the clivus Blumenbachii at the junction between the sphenoid and the basilary process of the occiptal bone. Virchow before the Physicalisch-medicinische Gesellschaft in Wurzburg, Feb. 14, 1856, tried to explain the physiognomy of cretins by a premature synostosis between the sphenoid and the basilary process and demonstrated this synostosis on a newborn cretin. He then showed sections of other skulls with reference to the development of the clivus and mentioned incidentally some exostoses on the upper surface of the clivus in and on which mucoid-cartilaginous (knorpelig-schleimig) growths were seen. Virchow had seen them as long as ten years before. Zenker also had seen three cases and later in the year 1856 Luschka published a case where two growths measuring one centimeter each had perforated the dura and had come out of the synchondrosis each through a separate 1.5 mm. cleft, while in the bone of the clivus a smaller additional tumor formation of the same kind was detected. The nature of these growths was thought to be cartilaginous and Virchow called them "Ecchondroses physaliphoræ spheno-occipitales," a term which well emphasizes the conception of their benignity. Others soon reported similar observations, but the relation to the notochord was not recognized until in 1858 Heinrich Mueller of Wurzburg, on the basis of exact embryologic studies, declared

*Read before the Minnesota Academy of Medicine, October 7, 1936.

them to be remnants of the chorda dorsalis. However, Virchow did not accept this conception and his overshadowing eminence in pathology prevailed until Ribbert definitely took side with Mueller in 1894. Ribbert at that time held the chair of Pathology at the University of Zurich and he made Steiner pay particular attention to the existence of such small formations at the clivus. Steiner then found them to be present in ten cases among 500 autopsies (2 per cent). This at once removed the tumors from the field of rare curiosities and made a closer investigation worth while. The fact that they were in the median line was against their being simple exostoses which might as well originate from lateral portions of the area. Furthermore the physaliphorous cells were seen to correspond in their appearance to the remnants of the notochord.

The whole subject was carefully described by Coenen[1] in 1925. He divides the chordomas into:

I. Cranial Chordomas
   1. Chordoma of the Clivus
      a. Benign
      b. Malignant
   2. Hypophyseal Chordoma
   3. Naso-pharyngeal Chordoma
   4. Dental Chordoma (arising from the odontoid process of the second cervical vertebra)

II. Vertebral Chordomas

III. Caudal or Sacro-coccygeal Chordomas
   1. Antesacral
   2. Retrosacral
   3. Central sacral Chordoma.

Up to 1925 he had gathered sixty-eight cases from the literature, including his own. Since then the number of reported cases has markedly increased. The Mayo Clinic alone reported two cranial, one cervical, and ten sacro-coccygeal tumors.[4] The etiology had been cleared up mateially by Ribbert, who was able to cause benign growths of notochord tissue by puncturing intervertebral discs and thus releasing some of the soft gelatinous material of the nucleus pulposus which after escape from its imprisonment had enough power of growth to form small tumors. The normal course of the notochord and the varying microscopic picture of the chordomas was studied with great care especially by Linck.[5,6] An illuminating picture of the upper course of the notochord is to be found in Fischel's "Entwicklung des Menschen" (Figs. 1 and 2).[3]

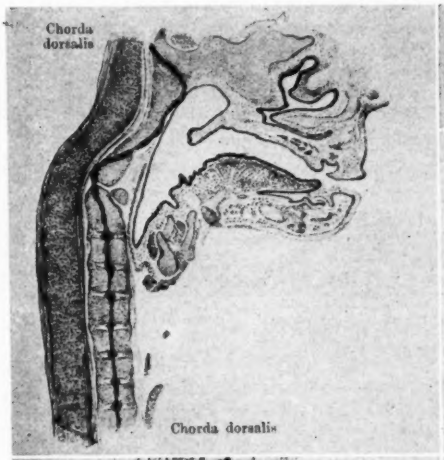
The benign tumors of the clivus and of some parts of the vertebral column have, by their benign nature, very little proliferative qualities and their microscopic picture resembles therefore more the normal remnants of the notochord. The tissue is very soft and gelatinous; the cells are full of vacuoles and many have lost their nuclei. These inert cell bodies have often fused with neighboring cells of the same dilapidated state, thus agglomerating into large gelatinous complexes. On the other hand, the malignant forms have, as a matter of course, areas in addition with more active proliferative qualities. We see here, areas with smaller, well staining cells alternating with parts of gelatinous disintegration. In the sacral chordomata (as will be shown) one may find areas which look very much like cartilage. Though the tissue has not the orderly arrangement of cartilage, it appears very closely related to it. At times, bony spicula or small areas of calcification are seen.

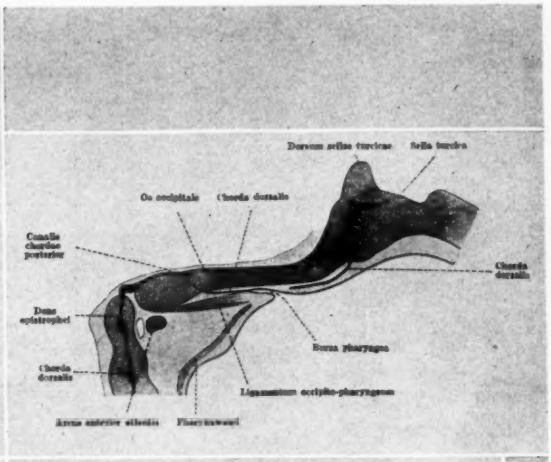
In the normal tissue of the early notochord, Linck[6] differentiates between chorda cells and chorda sheath. In the earlier stages of embryonal development, the cells are little differentiated from each other, the cell limits are not sharp and give thus more or less the impression of syncytial masses. However, in the marginal portions of the notochord, one sees, even in early embroys, cells with good outlines, which gives them the appearance of epithelium. The protoplasm of all these cells is rather dense. According to Linck, the notochord, after its primary anlage, runs through three stages, of which the picture mentioned would be the first. At a second stage, vacuoles develop in the protoplasm of the cells, either as single ones which may reach large proportions in the cell and drive the nucleus toward the periphery, or the vacuoles are numerous and smaller. This gives them a foamy appearance and caused Virchow to create the name "physaliphorous" (physalis-bubble). The content of these very clear, transparent vacuoles is still sub judice. Part of it is mucus, part, apparently, some form of glycogen. Linck then differentiated a third stage in the life cycle of the notochord cell, the stage of fibril formation. The cell protoplasm has undergone marked and diffuse thready changes, in many places with loss of contour of the individual cells. This brings the general appearance near that of fibrocartilage. It goes without saying that between

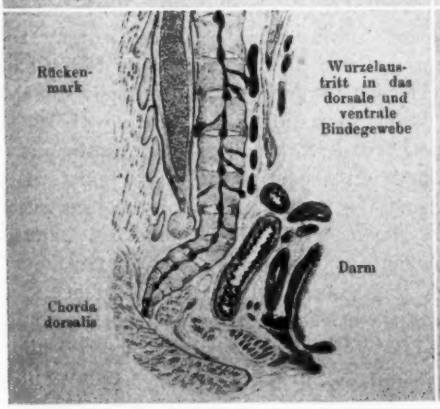
these three stages there is a gradual transition. They are often seen co-existent in the same fetus. In some areas, for instance in the odontoid ligament and in the pharyngeal portion, the cells do not reach the fibrillary stage and disintegrate before this stage is reached. Stewart, in 1922, called attention to the existence of small vacuoles in the nuclei of the notochord cells, the nature of which is not yet known.

The notochordal sheath (I am again following Linck) is a homogeneous membrane enclosing the notochord cells like a tube. This homogeneous sheath even surrounds isolated remnants of chordal cells. Only in the intervertebral portions of the chorda, this membrane could not be demonstrated.

Inside of this sheath one finds in the human embryo an intermediary substance which is pale blue or light grayish in the hematoxylin-eosin stained sections, homogeneous or slightly granular or striped. It is interposed between the central cellular strand and the outer sheath. In the earliest embryos it is not yet present, while the notochord sheath is a very early formation. The intermediary substance is apparently produced by the chorda cells after they have reached







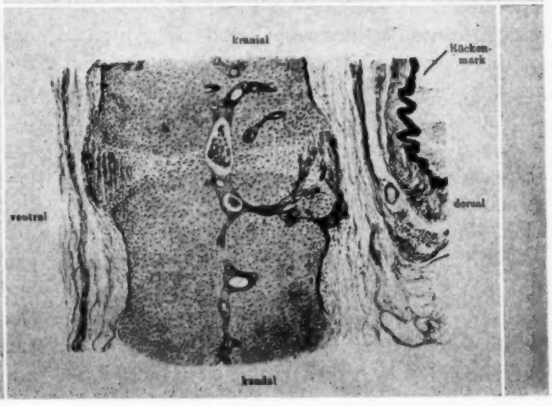


Fig. 1 *(upper left).* Notochord. Note its course through the odontoid process entering the cranial cavity at the foramen magnum, then diving through the clivus to reach the pharyngeal epithelium and turning upward toward the sella turcica (from Linck).

Fig. 2 *(upper right).* Notochord in its upper course. Note its relation to the bursa pharyngea (from Fischel).

Fig. 3 *(lower left).* Lower portion of notochord. Note the branching off from it toward the surface of the spinal column in lumbar area (from Linck).

Fig. 4 *(lower right).* Remnant of notochord at a later embryonic stage. Notochord remnants in sacral vertebra and on its posterior surface in the peridural connective tissue (from Linck).

a vacuolated stage, and is thus considered a product of the regressive stage of the chorda. Notwithstanding the similarity of this intermediary substance with the chordal sheath and the intimate proximity of the two, they should be considered as separate. The sheath stains somewhat better. The notochord is one of those organs which are destined to oblivion in the human and, therefore, dwindles and disappears in most places, leaving only here and there some small remnants. Where the cells are in connective tissue, a distinct sheath is mostly not recognizable.

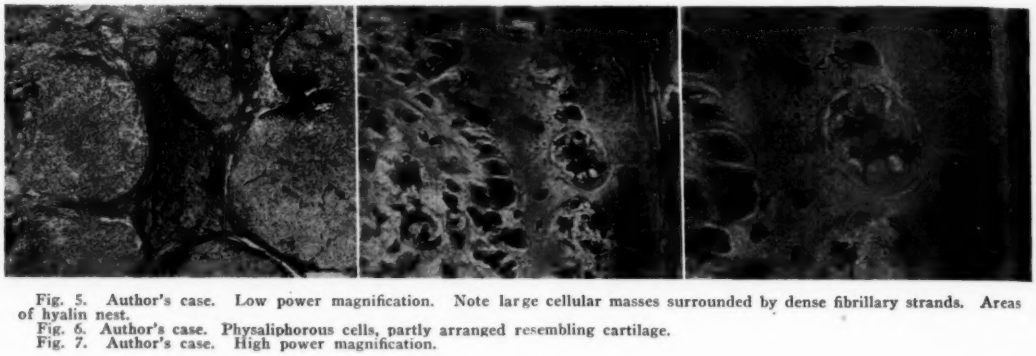


Fig. 5. Author's case. Low power magnification. Note large cellular masses surrounded by dense fibrillary strands. Areas of hyalin nest.
Fig. 6. Author's case. Physaliphorous cells, partly arranged resembling cartilage.
Fig. 7. Author's case. High power magnification.

Linck saw, in one of his young fetuses (2 cm. in length), a funnel-shaped protrusion of the notochord toward the surface of the pharyngeal epithelium. An intimate connection between notochord and pharyngeal epithelium was also seen in other larger embryos and already had been considered by Froriep, and later by Nebelthau, as a mechanical cause for the formation of the pharyngeal bursa, the rudimentary nongrowing notochord exerting a pulling effect on the pharyngeal mucosa from behind and above. This theory is accepted today. In 1922, Linck,[5] on the basis of his researches, stated that in the embryonal life, complexes of notochord cells are encountered in certain regions where they enter into direct contact and relation with surrounding connective tissue. These areas are on the dorsal and ventral side of the clivus Blumenbachii and in the odontoid ligament and then again on the ventral and dorsal surface of the lower spinal skeleton. The malignant chordomas originate from notochord cells which have preserved their early embryonal character or have regained it, and Linck thinks that their appearance is limited to the areas mentioned, all of which are outside the skeletal formation of the vertebral column and the basis cranii. From this observation the conclusion was drawn that complexes of notochordal cells which lie free in connective tissue are particularly prone to retain their early embryoneal proliferative qualities or may regain them, and that it is their exposure to mechanical injuries which renders them especially susceptible to tumor formation. The bearing of Ribbert's experimental work on this point is obvious. As pointed out above, releasing by puncture, portions of the nuclei pulposi of the intervertebral discs allowed remnants of notochord material to grow into small, benign chordomata identical with those seen on the upper surface of the clivus. Linck's theory would seem plausible inasmuch as accidentally displaced cells play an important rôle in the etiology of tumors in general. However, this conception does not explain the aforementioned observation by Luschka of a small benign chordoma in the center of the bone of the clivus, nor the malignant central chordomata of the sacrum. The lumbar portion of the notochord sends ramifications to the surface of the vertebræ (Fig. 3). Some malignant chordomata of the lumbar spine are reported in recent years by Davison and Weil,[2] and by Zollinger.[8] In both these cases the growth had started from the third lumbar vertebra and had reached a large size.

The dorsal vertebræ seem to be less frequently affected, perhaps on account of the rigidity of the dorsal spine, this quality reducing the mechanical factor in the etiology. Simon[7] con-

siders notochordal remnants in some vertebral bodies and not in the nuclei pulposi as the origin of these growths. He calls attention to the fact that, in the adult human, the nuclei pulposi of the intervertebral discs consist of clumped gelatinous masses with no nuclei. The disintegration is thought to be due to pressure caused by the upright position, while notochordal remnants in the bodies of the vertebræ are free from such degenerating influence. This view is strengthened by Schmorl's observation in three cases of persistence of a notochordal channel through the bodies of vertebræ in adults.

The sacro-coccygeal chordomas, which are of chief interest for this report, may develop as presacral or retrosacral or central sacral growths. They may assume very large proportions. The first publication of a malignant sacral chordoma was by Feldmann, in 1910. Judging from the literature at my command the secondary intraspinal growth in a case of sacral chordoma which I have observed seems to be unique. The case dates back to 1920, but the interest which these growths have created of late tempts me to report the findings.

H. K. G., a lawyer, twenty-eight years old, said his trouble started following an injury. In April, 1919, while he was stepping off an elevator, the operator started the car before he got off. He grasped the gates and swung back and forth on them till the elevator came back to the floor. He first considered it only a nervous shock, but two days later he noticed a pain in the right popliteal space. There was a constant drawing sensation and in the latter part of May the pain became severe in the right hip. It gradually included the lower parts of the back and especially the tip of the coccyx. Then the whole right limb gradually became numb and heavy, so that he had to drag the leg. In July, atrophy of gluteal and thigh muscles was noticed. Soon after this he suffered from constipation so severe that even drastic cathartics would not move the bowels and he had to use his fingers to empty the rectum. In August, an x-ray was taken and he was told there was some trouble with his spine. There was a shadow in the region of the right sacro-iliac joint. Four abscessed teeth were removed. A blood Wassermann was negative. Retention of urine developed, and in January, 1920, we found it amounted to 850 c.c. The urine had become foul smelling, but improved under regular washing of the bladder. The retention persisted and he was unable to urinate. Frequently, however, it came involuntarily.

A rectal examination was then made and we were able to feel a hard, sessile tumor on the right upper anterior surface of the sacrum. The general condition had become desperate and an attempt at surgical relief was decided upon.

At operation, February 16, 1920, a median incision from the navel toward the symphysis allowed the tumor to be readily brought into view. It was directly below the promontory, on the right side of the sacrum. It was broadly sessile and had evidently originated from

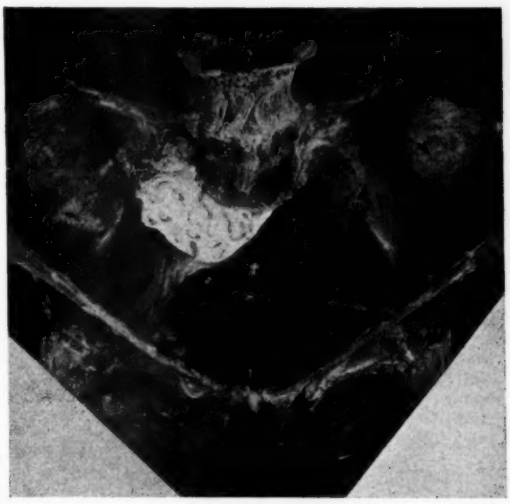


Fig. 8. Plaster of Paris reconstruction of chordoma reported.

the bone. The peritoneum was then split. The tumor, which was nodular, had the consistency of cartilage. It was protruding about 3 cm. from the surface of the bone. Its longitudinal diameter was about 6 or 7 cm. downward from the promontory, while transversely it measured 4 or 5 cm. and encroached somewhat on the right side upon the upper sacral foramina. Gently lifting the bifurcation of the large vessels upward, the mass was removed with a chisel, partly gouging it away. Most of the whole thickness of the bone was removed in the central area. Toward the spinal canal there remained only a thin, bony shell which was quite springy. The tumor had evidently started near the center of the bone. The first, second, and the upper border of the third sacral foramina were freed by this procedure. Though the tumor reached down to the level of the fourth foramen, this latter was free. After all tissue, which could be recognized as pathologic, was removed and, in addition, everywhere an apparently healthy shell of bone had been taken away, iodoform, boiled in 1:500 bichloride solution, was rubbed into the raw bone surface to assure us of the sterility of the presumbably forming blood clot. The peritoneum was then sutured over this cavity in the sacrum. Radium was applied later on.

The patient walked pretty well until July, but in September he was losing ground again. Now a large mass could be felt over the right wing of the sacrum posteriorly, bulging this area diffusely. On the 20th of September, 1920, we operated again. Tumor tissue, 4 cm. thick and 7 cm. in length and in width, was

removed from underneath the sacro-lumbar muscles. It reached from the right sacro-iliac synchondrosis to a little beyond the midline. After large cartilage-like masses had been removed from the depth, the spinal canal was reached near the third sacral foramen. Most

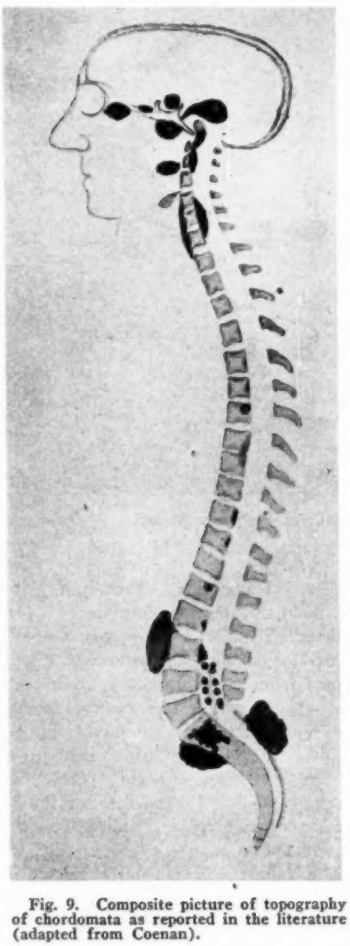


Fig. 9. Composite picture of topography of chordomata as reported in the literature (adapted from Coenan).

of the right side of the sacrum had been sacrificed by now. Only between the first and second foramina a ridge could be left for the support of the ileum. We then noticed tumor tissue at the upper edge of the sacrum, continuing under the fifth lumbar lamina on the right side. After resecting this lamina, large chondroma-like masses could be removed from the spinal canal behind the dura. The dura was then opened and a unique picture presented itself. Floating over and between the nerves of the cauda equina we saw perfectly round, berry-like formations of yellow color, semitransparent like amber beads, pedicled downward by long, very thin and delicate threads. The beads had a diameter of from 5 to 7 mm. and were perfectly round. They were removed and the dura was closed tight. Part of the adjoining musculature was packed into the sacral gap.

On November 2, six weeks after this operation, the record reads: Walks rather freely and without cane into our office. Bladder and rectum same as before. A numbness which he had felt in his left heel, prior to his first operation, has disappeared, and his right foot had recently become stronger again. Radium was again used, but things grew gradually worse and without detailing the further events, he died in February, 1923.

The course of the disease in this case, lasting about four years from the first symptoms to the fatal ending, represents the average for such cases. These tumors grow, as a rule, slowly but insidiously. At the time of the operation, the tumor was thought to be a chondroma on account of its hard consistency. The correct diagnosis was only made later on, when a review of the microscopic sections revealed the true nature of the condition. The picture in the sections varied very much. The parts resembling cartilage showed considerable variation in size and shape of the cells, some with the characteristic vacuoles, multiple or large and single. The nuclei varied even more; some were large, others quite small, often irregular in form, crescent- or star-shaped. In some cells there were two or more nuclei. Again, in other areas, cells and intercellular substance were replaced by a practically non-staining gelatinous material of boggy contours, undoubtedly due to a mucoid degeneration, the end stage of the physaliphorous cells. Areas of this kind resemble myxochondroma. Amorphous almost unstained masses filled, sometimes, a whole high power field. Nowhere was to be seen an orderly arranged tissue. In fact it was disorder which was the characteristic feature of the microscopic picture. Small spiculæ of amorphous calcareous material were encountered here and there. Where the cells were more orderly arranged, the tissue, at first glance, looked like cartilage. Many areas were quite cellular, the cells then being small and of different shapes.

This picture is the same as usually found in the reported cases. Ewing considers the location of these growths more important for the diagnosis than their microscopic appearance, which may vary a great deal. At times sarcoma- or carcinoma-like cellular proliferation is seen. The varying degrees of malignancy correspond with the variability of the microscopic picture from very cellular growths down to advanced mucoid degeneration.

Our patient accused a wrenching of the back as the cause of the trouble. It is surprising how often one encounters trauma in connection with the onset in the reported cases. A slow growing tumor of this kind—located in the spinal column—would, naturally, quite often make its first symptoms after some minor sudden trauma.

One is, of course, reminded of Ribbert's experiments of puncturing the nucleus pulposus of intervertebral discs. This tissue, ordinarily held in check by solid enclosure, seems to regain its proliferative quality when released. However, such growths were all quite small and of the benign type.

The growth in our case had its center to the right of the union between first and second sacral segments. The intervertebral disc is here not only the largest among the sacral ones but persists the longest. This may have some etiologic importance.

To sum up: The chordoma in our patient showed up on the surface of the sacrum, first in front, and later on the posterior side by growing along the right contour of the sacral canal. It progressed extradurally under the lamina of the fifth lumbar vertebra and also intradurally by a bunch of beads on long and very thin, thready pedicles. This latter form of extension I did not find mentioned in other reported cases.

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DIVERTICULITIS OF THE COLON*

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SINCE congenital diverticula of the colon, or the traction-pulsion type, are rare, it is natural that when we speak of diverticulitis of the colon we mean inflammation of the acquired variety.

The congenital type of diverticula is relatively large. The acquired is small: the size of a small shot, often the size of a pea, seldom as large as a small cherry.

The acquired diverticula are most frequent in the distal portion of the bowel, becoming less frequent as the cecum is approached, and in the cecum they are very rare. Where many are present they may be arranged in two longitudinal rows.

From the appendix base, the three longitudinal muscle bands separate and extend about equidistant along the full length of the colon to the rectum. One longitudinal muscle band is at the site of the attachment of the mesocolon and hence is named the tenia mesocolica. The other two are often called the lateral bands. In the transverse colon, the mesocolic band, and likewise the mesocolon, is posterior, and the lateral bands are above and below. In the right and left colon, the mesocolic band is posterior and medianward, as is also the mesocolon, but the lateral bands are anterior and postero-lateral.

Mailer states: "The exact situation of diverticula in relation to the circumference of the bowel is remarkably constant. They appear between the tenia mesocolica and the lateral bands, closer to the latter than the former." This is the place where the blood vessels penetrate the muscle fibers. If Mailer's statement is correct, then the lateral bands are of interest to us and should be identified when one examines a bowel for diverticulitis.

Diverticulitis is encountered more often than we are led to believe. It is not a rare disease, but is often undiagnosed.

As long as the diverticula are empty no symptoms are produced. The first mild symptoms are caused by the sacs becoming filled with fecal matter. Later this becomes dried and hard. If inflammation sets in, the symptoms begin. An acute inflammation of a solitary diverticulum looks like a localized inflammation in the side of the bowel wall. If the acute inflammation

*From the Dakota Clinic, Fargo, North Dakota.

spreads, more of the circumference of the bowel may be swollen, hard and reddened. When multiple diverticula are involved in a bowel segment, a larger tumor-like mass is produced. This

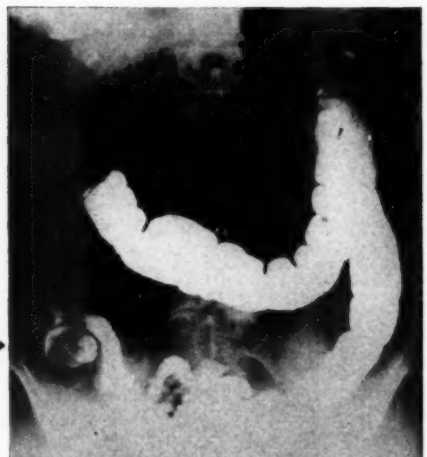

Fig. 1. Case 1. Congenital cecal diverticulitis.

may be more or less spherical, like a small orange, or longer and sausage shaped.

Diverticulitis rarely presents the picture of complete obstruction and seldom results in perforation into the abdominal cavity. However, I will present case histories where these conditions were found. Also, in perforative cases, the superiority of rectal drainage over abdominal drainage will be stressed. Most of the histories chosen were of surgically treated patients, and were selected since the gross pathology was actually seen.

Case 1.—Mrs. E. G. R., aged fifty-four; stated that for two months she had had a pain in the right lower quadrant with considerable gas. This pain is made worse by riding over rough roads, and when she lies on her left side she feels a drawing in the right side. Bowels are regular. The laboratory examinations were negative, except that x-ray showed a rounded pocket coming off of the cecum in the region of the appendix. This pocket was about two inches in diameter. Physical examination was negative, except for a definite tender area in the right lower quadrant. No mass was felt, perhaps because the woman was quite fleshy. At operation a hard mass the size of an apple was found in the cecum near the appendix. A partial resection of the cecum and lateral anastomosis of the terminal ileum and cecum was done. Recovery followed. Examination of the mass showed it to be a large diverticulum of the cecum, with markedly thickened walls, and containing a fecalith nearly as large as a golf ball. This was considered to be a congenital diverticulum.

I think a safer operation would have been to have done a double-barreled resection of the terminal ileum and cecum with closure later. Congenital diverticula are not limited in their size as are the acquired variety. Loose bowel movements, so common in sigmoidal diverticulitis, are usually not present when the disease is in the proximal colon.

Case 2.—Mr. J. D., aged thirty-five, had an acute attack of pain in the right lower quadrant sixteen hours before he was seen. He had been nauseated and had vomited once. Examination: Temperature, 100.5; pulse, 90; respiration, 22; w. b. c., 14,000; urine, normal. There was marked tenderness over the cecum and definite muscle spasm. Diagnosis: acute appendicitis. At operation the appendix did not look diseased, but was removed. On the anterior-mesial wall of the cecum, four inches from the lower end, was a pea-sized abscess. It showed grayish-white through the reddened peritoneal covering. This was buried with two purse-strings. Post-operative diagnosis—acute diverticulitis of the cecum. Convalescence was prompt.

It would have been impossible to have diagnosed this condition before operation. Again is to be noted the absence of loose bowel movements. Acute diverticulitis in the right colon is rare.

Case 3.—Mr. D. B., aged fifty-four, a heavy-set farmer, came to me many years ago. He complained of a dull pain in the lower left side which had persisted for years. He was in the habit of taking frequent enemas to get relief from gas. Two weeks before I saw him he had eaten a lot of stuffed dates, had more distress than ever, and then came asking for relief. The abdomen was markedly distended. Abdominal and rectal examination suggested the presence of a mass in the lower left quadrant. Exploration revealed, in the lower sigmoid, a hard, reddened, symmetrically rounded mass the size of an orange, with adherent fatty tags. A diagnosis of diverticulitis was made and a colostomy performed. Recovery was prompt, but the patient was very dissatisfied. He had never heard of diverticulitis, and did not accept the diagnosis. He resented the nuisance of caring for the colostomy and did not come back for further check-ups. This state of mind resulted a year later in his consulting an eminent surgeon who explored him and told his family that he had cancer and that only a short life expectancy remained. This diagnosis was easy for them to understand and was accepted as the true one. However, contrary to the family's expectations, his health became robust, and four years later he returned to his last surgeon for closure of the colostomy. Unfortunately,

he died the second day after a resection for diverticulitis. The diagnosis was confirmed by the pathologist's report.

This history shows that experienced surgeons can easily become confused in the differentiation between sigmoidal diverticulitis and carcinoma. Alvarez describes a similar case but with a different ending. At exploration with colostomy, the patient was told that he had a cancer that could not be removed. He took his troubles to the Christian Scientists and, as his health continued to improve, he gave the credit to this cult. In fact, he was so grateful that he donated a church to them. Cancer is a neoplasm; diverticulitis is an inflammation. To diagnose diverticulitis, look for the signs of the inflammation: the redness, the rounded swelling, the adherent fatty tags, swelling of the adjacent mesocolon and, if acute, patches of exudate. If the operator cannot come to a decision, a biospy should be secured. Moynihan, and later Finney, believed that some of the earlier reported cures of cancer of the colon really followed removal of tumefactions caused by these inflammations.

Case 4.—Mr. W. B. H., a healthy-looking man of seventy-two, was seen in October, 1932, complaining of blood in his stools. He had noticed this during the previous 10 months. Lately he has suffered from gas and constipation. He would feel like having a bowel movement and sometimes only a little blood came. His hemoglobin was 50 per cent; r. b. c. 4,080,000; w. b. c. 8,000. The skiagraph showed a marked filling defect in the lower sigmoid, and, near by, diverticula. Proctoscopic examination revealed a hard, ulcerating, bleeding growth. A resection of the bowel was made and the growth proved to be an adeno-carcinoma which filled the lumen of the bowel so that only a very small opening remained. For a year he had fine health; then he was annoyed by daily loose bowel movements for two weeks. In the summer of 1935 he again had loose bowel movements but also a dull pain in the lower left quadrant. Disturbing thoughts of a recurrence of his cancer worried him. Examination showed normal blood tests, but he was tender over the sigmoid. The fact that he was known to have diverticula, together with the characteristic history, leaves no doubt that he was suffering from attacks of diverticulitis. Now, with his cancer cured and dietary measures controlling the diverticulitis, he plays golf in California in the winter, and in Dakota in the summer.

Case 5.—Mr. G. A. L. was a rather slender bookkeeper, thirty-four years of age. He had had moderate abdominal pain, took castor-oil and stayed in bed a day. One month later, he had a more severe attack, accompanied by vomiting, chills, fever and loose stools. The pain was felt below the umbilicus and the tenderness extended downward into the left lower quadrant. His physician reported that the general examination was negative, as was the search for parasites in the stools. However, a little bright red blood was present

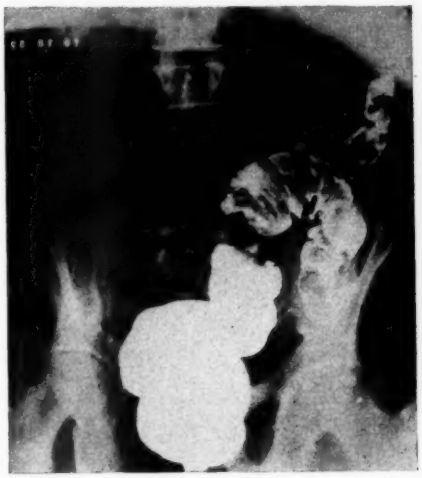

Fig. 2. Case 4. Carcinoma and diverticulosis of the sigmoid.

in some of the movements. Following a colon ray, it was reported that there was an abnormal narrowing near the hepatic flexure; otherwise there were no definite abnormalities. At this time a consultant suggested the possibility of a malignancy. The patient felt well some days and on other days would have five or six loose movements. Two months later a colon ray was made at a different institution. The interpretation here was that a filling defect could be seen in the fluoroscopic examination, but not in the skiagraph, and that the skiagraph showed a diverticulum of the sigmoid. Called in consultation, I diagnosed diverticulitis and advised medical treatment. Unfortunately, the months of uncertainty in the diagnosis and the various opinions of consultants had fixed in the minds of the patient and family the belief that cancer was the cause of the illness and no argument advanced could change their minds. The attending physician asked me to explore the patient and settle the matter. At operation was found a band fixing the hepatic portion of the colon to the liver and causing the colon defect previously found. In the wall of the lower sigmoid were eight to ten small, hard objects ranging in size from small bird-shot to the size of a small pea. These were fecaliths in diverticular sacs. The diagnosis confirmed, the abdomen was closed and treatment outlined. The patient has done well since.

As is shown in this instance, x-ray may be of little value in diagnosis and may even help to obscure it. However, there should be little diffi-

culty in making the diagnosis if we know the symptoms and findings present in diverticulitis.

Case 6.—Mr. J. W., aged forty-one, a heavy-set farmer, for three years had had discomfort in the right lower quadrant, associated with gas. Lately he had

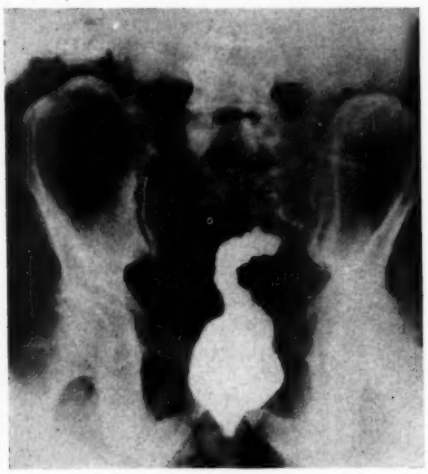

Fig. 3. Case 7. Acute obstruction in the sigmoid, caused by diverticulitis.

felt some discomfort in the lower left quadrant. He had had two or three loose movements in the morning and, about once a year, diarrhea for a day. All laboratory reports were negative, except that he had no free acid in the gastric contents. X-ray examinations of the stomach, gallbladder, and colon were reported negative. Stool examinations showed a few endameba histolytica. Under what seemed appropriate treatment he improved and was fairly well for a year. Following a month of discomfort in the central abdomen, he came to the hospital the second evening of an acute abdominal attack. He seemed to be very sick and complained of the pain most in the lower central portion. His temperature was 100; pulse, 105; white blood cells, 16,000. Examination showed a distended abdomen with muscle spasm and point of greatest tenderness in the lower central part. The diagnosis was acute abdomen. Diverticulitis was thought of, but acute appendicitis seemed at the time the most likely cause. For some reason which seems strange now, a rectal examination was overlooked. On opening the abdomen, a large, white appendix was found and a mass the size of a billiard ball was present in the lower sigmoid. It was just below the promontory of the sacrum. It was hard, smooth, symmetrical and reddened. The fatty tags were adherent and the mass was carefully inspected for a threatened perforation, but it was not found. A drain was inserted and the abdomen closed. A few days later, pus with a colon odor began to discharge. Nine days later it was evident, from the examination, that he was not doing so well and that a considerable amount of pus was present in the pelvis. This was evacuated through the anterior rectal wall and a self-retaining tube was inserted with the lower end protruding through the anus. He improved and went home. He was home but a short time when again he had an acute attack and returned to the hospital. An accumulation of pus could be felt in the pelvis again, and through the former rectal incision a forceps was thrust and a tube inserted. Following the evacuation of this pus, no more abscesses formed. Three months later, however, he returned to the hospital with an obstruction. Under spinal anesthesia, two loops of ileum which had become adherent to the old abdominal scar were found. These were freed. The examination of the sigmoid showed only a slight thickening and a few adhesions. This man loved to eat. He had to have some small attacks of pain before he would stay on his diet. His operation was five years ago and he now stays well.

The differentiation between the acute attack of appendicitis and acute sigmoidal diverticulitis is not always easy. Too much emphasis cannot be put on the rectal examination and history. In this patient was seen how the diverticulitis looked before it perforated into the abdomen, demonstrated the value of rectal drainage, and showed how the inflamed area of the sigmoid looked after healing had taken place.

Case 7.—Mr. W. F. P. was a heavy-set farmer of fifty-four. For many years he had had two or three loose stools a day, but had otherwise been well until four days previous. The bowels felt as if they should move but only a little blood appeared when he went to the toilet. Examination showed a greatly distended abdomen, and a mass could be felt per rectum. Proctoscopic examination showed an obstructing growth in the wall of the rectum, about 18 cm. up. The temperature was 99.8; pulse, 96; blood pressure 164/110, and the leukocyte count 19,450. With the diagnosis of obstruction of the sigmoid, probably due to diverticulitis, an exploration with colostomy was done. A hard mass, four inches in length, was present in the lower part of the sigmoid. This disappeared within some weeks following the operation. He intends to have the colostomy closed. In all probability, obstruction could have been avoided if proper medical care had been taken earlier.

Case 8.—Mrs. O. J. S., aged sixty-eight, plump, a farmer's wife, first had an attack of pain one year previously. This lasted all night and she was very sore on pressure in the lower middle part of the abdomen. Occasionally, she had had discomfort for a day or two. One week ago she had another attack. As this was getting better, an acute exacerbation recurred the day before I saw her. Her temperature was 99; pulse, 78, and the laboratory tests were normal, the white count being only 7,200. Examination revealed a plum-sized, hard, immobile growth which could be felt through the rectal wall and was anterior to it. The diagnosis was pelvic tumor, and exploration advised and accepted.

At operation, under spinal anesthesia, the mass was found to be in the lower sigmoid. It was slightly adherent, but stripped loose easily and was brought into the wound for examination. Three or four inches of the sigmoid was involved. It was not woody hard, but

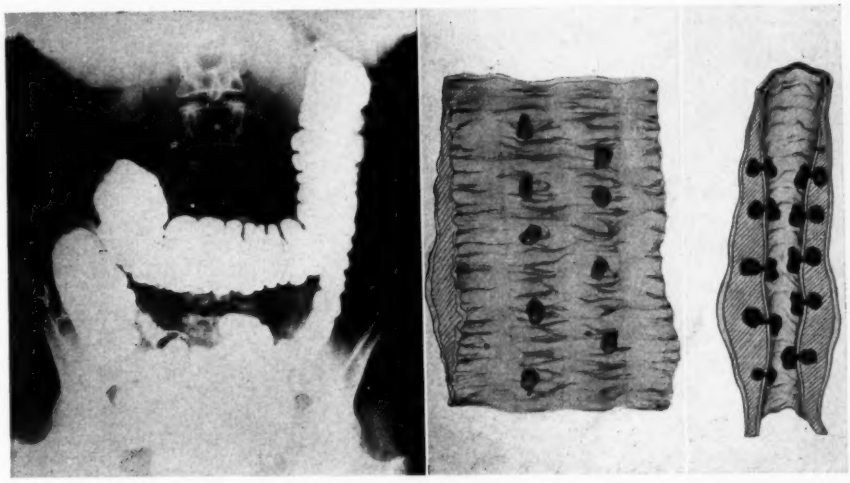

Fig. 4. Case 9. *A*, Diverticulitis of sigmoid not visible by x-ray. *B*, Sketch of condition found in resected sigmoid.

edematous, and the fatty tags and the adjacent mesosigmoid were swollen. The patient, on being questioned, stated that she was tired of abdominal discomfort and acute attacks of pain and was willing to have a colostomy performed when told that this could be closed later. This was done. Follow-up examinations showed a decrease in the size of the growth and disappearance in about four months. One year after the operation, the colostomy was closed. She remained perfectly well for four years. Then she had several attacks of discomfort in the lower abdomen, lasting a few days. Contrary to advice, she, at no time, had taken any particular care of herself. A year later she reported that she had been obeying directions and was very well.

This case shows that a diverticulitis can be confused with a pelvic tumor, especially if the patient is a woman. Also it shows what we may expect a colostomy to do. A colon ray might have led to the correct diagnosis.

Case 9.—Mrs. R. E. S., aged forty-eight, was seen in 1928, complaining of attacks of loose bowel movements. These had persisted despite operations for gallstones, appendix removal, partial ovariectomy, and suspension of the uterus, performed in another city. Yearly she would have an attack which would last a week, but during the past year she had frequent recurrences. These were accompanied by soreness in the mid-abdomen. The stools contained mucus, but no blood or parasites. She had an achylia and secondary anemia, and was much annoyed by gas. The physical examination was essentially negative except for abdominal scars and a small, tender mass in the region of the left ovary. The proctoscopic examination was negative, except for mucus. The x-ray examination showed pyloric adhesions and the descending colon did not retain the barium well. There were no filling defects, nor smoothing out of the haustrations. The roentgenologist gave an opinion, however, that the patient had colitis. With the aid of diet, iron and dilute hydrochloric acid she was improved for two years. Then she had an acute abdominal attack accompanied by a day of diarrhea. She had been constipated and was given mineral oil. What seemed to be the left ovary was more tender. Again she felt better, but returned in 1932, stating that she had been ill for two months with pain in the left lower quadrant and marked constipation. The pelvic mass was more tender and somewhat larger. The x-ray report stated that there was temporary holdup to the barium enema going into the sigmoid, but that no diverticula or marked narrowing could be seen. The patient was tired of her trouble and consented to have the pelvic mass operated upon.

Operation: The pelvis was explored and a long, sausage-shaped tumor was found in the lower sigmoid. In one part there was a hard, dimpled area. Freeing the peritoneum on both sides of the mesosigmoid, the mass was brought out of the abdomen through a small left-sided incision. Three days later this portion of the bowel was excised and clamps applied to the two open ends. Later on, the bowel was closed, freed, and dropped back into the abdomen. The specimen showed a seven-inch segment of sigmoid which, when opened, showed the following interesting picture: The wall of the bowel was markedly thickened. Arranged in two rows parallel to the long axis were nine fecaliths averaging one-half to five-eighths inch in their longest diameters and projecting well into the lumen of the

bowel. They were shaped like dumb-bells, the handles extending through the muscular coats of the bowel and expanding within the diverticula to about the same degree as into the lumen of the sigmoid. Eighteen months later she had an attack which was probably diverticulitis. There was some tenderness in the left lower quadrant, and a colon ray showed a shadow suggestive of a diverticulum. She was again seen in June, 1936. She has no trouble with the abdomen.

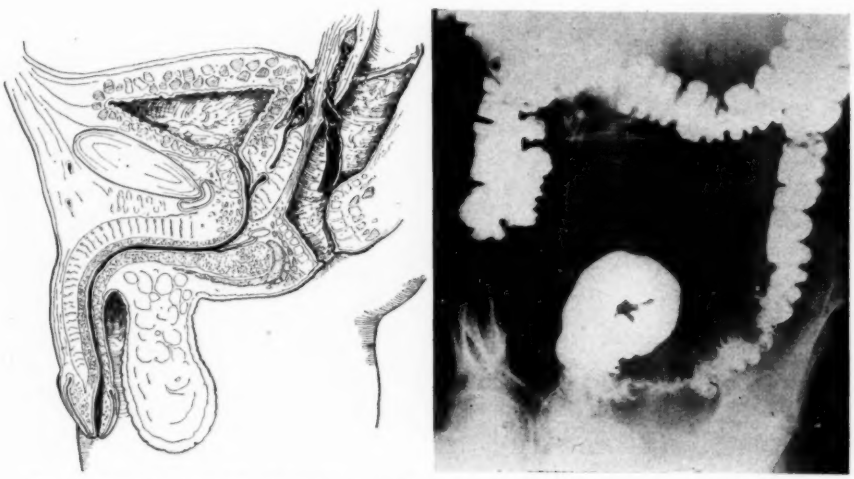

Fig. 5. Case 10. *A*, Sketch of operative procedure of draining abscess directly into rectum. *B*, Condition found on subsidence of acute symptoms.

The history of this patient is presented with some detail, since it shows many points of interest in symptoms, findings, and treatment. Resections of the sigmoid for diverticulitis are seldom indicated. In this instance, I think it was justified.

Case 10.—A. L. M., a well-nourished man of seventy-six, began having symptoms of a slight diarrhea six weeks before. A few days after the onset he had a chill and slight discomfort in the left lower abdomen. A day or two later a mass could be felt just above the prostate, extending upwards and towards the left side, which could also be felt through the abdominal wall. Persistent, irregular fever set in, and the discomfort increased. Gradually he became worse, and chills, followed by heavy sweats, developed. He was a very sick man, and it seemed that he must have further help if he were to survive. Under gas anesthesia, on December 6, 1933, an attempt was made to drain the diverticulitis through the anterior rectal wall. A week later, as no improvement followed, a second attempt was made. As the diverticulitis mass was low down, and the swelling could be reached with the finger, an opening was made through the rectal mucosa directly into the lower part of the mass, and, with forceps and finger, blunt dissection was carried upwards between the layers of the greatly thickened bowel wall until a softened area was reached. A Penrose drain was inserted into this necrotic center. The effect was dramatic. The temperature went down, no further chills and sweats followed, pus discharged freely into the rectum for many days, and recovery followed. This patient has watched his diet and remains well.

So far as I can tell from a search of the literature, the method used in this case is original. In the occasional case in which the abscess occurs in this location, and when the symptoms warrant, rectal drainage is a surgically sound procedure.

Case 11.—Mr. M. H. A., a heavy-set man of fifty, had been troubled by gas for an indefinite period. He developed an acute pain in the lower central abdomen which increased in severity and finally localized in the lower left quadrant, where an extremely tender mass could be felt, parallel to the inguinal ligament. This could also be felt per rectum. He looked very ill and his fever stayed around 103 and 104 degrees for ten days. The leukocyte count rose to 18,000 and gradually subsided along with the fever. Very strict diet, heat and Russian mineral oil was the treatment, and he remained in bed a month. Four months later the mass, although small, was still palpable. A colon ray made at this time showed a marked filling defect in the lower descending colon and upper sigmoid. Following the expulsion of the barium a diverticulum could be seen. Three months later the diverticulum still showed plainly and there was still considerable narrowing. For over a year he had soreness at times. This gradually

left him and now, five years since the attack began, he stays on his diet and he remains well.

This patient shows that even in the very acute cases of diverticulitis perforation may not occur and that symptoms do subside under good care.

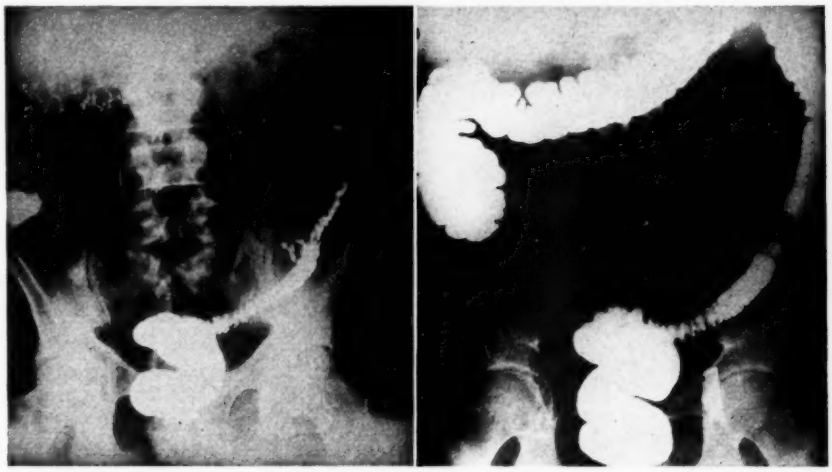

Fig. 6. Case 11. *A*, Abscess tract after acute symptoms had subsided. *B*, Stricture present three years later. Patient otherwise in good health.

However, this man was ill a long time and disabled still longer. If I see such a patient again I shall consider the possibility of draining the diverticulitis into the bowel.

Summary

Diverticulosis is easy to diagnose. The skiagraph shows the multiple sacs. Diverticulitis is seldom shown by the x-ray as barium cannot penetrate into the already filled diverticula. Only when the bowel wall is greatly swollen and consequently the lumen narrowed, will a picture show any changes. Of course, empty diverticula in the neighborhood of such a narrowed area in the bowel suggest diverticulitis.

It is usually impossible to diagnose diverticulitis of the right colon. The symptoms are the same as those of appendicitis, and in all probability an operation for appendicitis will take place. However, the correct diagnosis should not be overlooked at operation.

To make a diagnosis of diverticulitis, first rule out colitis, cancer and, in women, tumor of the adnexa.

Colitis can be excluded by the persistence of symptoms, by proctoscopic and stool examinations and by the x-ray.

Cancer is not always so easily excluded. A tumor may be present, but this may also be true of diverticulitis. At x-ray examination, a filling defect may be seen which can be easy or difficult to differentiate. While blood may be present in the stools in both diseases, fortunately the clinical course is different. Cancer is painless. If it occurs in the right colon, gas disturbance, loss of weight and anemia follow; if in the left colon, gas disturbance and, eventually, obstruction, are the common symptoms.

In diverticulitis we should be able to make a diagnosis even when x-ray examination is of little or no help. The proctoscopic examination may be negative, and the stools may or may not show a little blood. It is then that we depend upon the history of the symptoms and results of our examination of the lower left quadrant.

Attacks of disturbances from gas and loose bowel movements, accompanied by soreness in the left side of the abdomen with relief between attacks, always suggest the possibility of diverticulitis. If the attacks increase in severity, are accompanied by more pain, fever and chilly sensations, diverticulitis is a probability. If a tender mass can be felt just above the inguinal ligament or per rectum, diverticulitis is a certainty.

Acute diverticulitis with its sudden onset close-

ly resembles, in every way, acute appendicitis. The greatest tenderness and muscle spasm, however, is over the sigmoid instead of the cecum, and if tenderness is found per rectum it is on the left side, or in the center; not on the right side.

Diverticulitis should be treated medically, which, although it does not cure, is the most satisfactory method with a few exceptions.

In perforative diverticulitis, pelvic drainage through the rectum, or through the vaginal vault in women, is by far the best operation. There is seldom an excuse for a laporatomy. If the diverticulitis is very low in the sigmoid so that it can easily be felt per rectum and a perforation threatens, incision of the mucous membrane and blunt dissection upwards between the layers of the bowel to the focus of trouble should be considered.

Occasionally where a tumorous mass persists after efficient and prolonged treatment, and symptoms are ill controlled, a resection by the double-barreled method, with later closure by the clamp method, should be done. Colostomy is also valuable in the persistent case. However, this, too, should be closed after some months of rest to the diseased bowel.

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BENZEDRINE IN THE TREATMENT OF NARCOLEPSY*

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THE introduction of benzedrine-sulphate in the treatment of narcolepsy has stimulated a new interest in this disease. In December, 1935, Prinzmetal and Bloomberg[5] reported very favorable results in the treatment of nine cases of narcolepsy with this new drug. In March, 1936, Ulrich, Trapp and Vidgoff[6] reported equally favorable results in an additional six cases. Alles[1] has pointed out the close relationship in structural formula between benzedrine, ephedrin and adrenalin and has indicated that benzedrine has a much more profound central stimulating effect and less peripheral effect than either ephedrin or adrenalin. This marked stimulating effect of the central nervous system suggested to Prinzmetal,[2] who had worked with Alles on the pharmacology of benzedrine, that this new compound might be effective in the treatment of such conditions as narcolepsy.

Benzedrine was first introduced clinically as an inhalation treatment for the relief of nasal congestion. It was noted that when the benzedrine inhalor was used too frequently it had a tendency to produce insomnia.

Narcolepsy[3] is a condition characterized by attacks of diurnal sleep and in the majority of instances is accompanied by seizures of sudden muscular weakness causing profound helplessness. These attacks are known as cataplexy. The cause of narcolepsy is unknown but it has been suggested that there might be some relationship between this syndrome and encephalitis and also that narcolepsy might be secondary to head injuries. However, in the majority of instances, no definite cause has been determined. It has been observed that the disease occurs most commonly in young individuals, the majority of instances occurring under the age of thirty, and also that it is more common in the male. It is more prevalent during adolescence. It may begin with attacks of either irresistible sleep or cataplexy. Daniel[3] in his excellent monograph on narcolepsy has included under this heading many milder cases of sleepiness occurring during the day. In the far advanced case, the attacks of sleep plus the seizures of cataplexy cause almost complete incapacity. Many times during a day, the patient is attacked by a desire to sleep and these attacks last from a few minutes to as long as one-half hour. The cataplectic attacks commonly follow any emotional excitement such as laughter or anger. During such excitement, the patient becomes weak, is unable to support

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himself, and may even fall to the ground. Narcolepsy is a chronic condition and may last a lifetime. Physical examination usually proves negative. Blood studies, x-ray of the skull, and various other investigations have given no clue as to a specific etiology. A low basal metabolic rate and a history of a rapid increase in weight at the inception of the disease is common. Until the introduction of ephedrin-sulphate in treatment by Janota[4] in 1931, no successful treatment was available. Ephedrin produced marked improvement in symptoms in many cases but unfortunately the effect did not last and the patients found it necessary to gradually increase the dose. The deleterious effects of ephedrin as well as the excessive cost of the drug were reasons given by narcoleptic patients for discontinuing the use of the drug. To date, fifteen cases have been reported in the literature as having been successfully treated with benzedrine; these unusually favorable results have prompted the reporting of experience in two additional cases of narcolepsy treated with benzedrine.

Case Reports

Case 1.—The patient is a seventeen-year-old male high school student. For the past eight years, he has complained of attacks of sleep and also spells of weakness on excitement. The only relevant fact obtained in the family history was that his mother often fell asleep several times during the day whenever she sat still for any length of time. The mother gave no history of cataplectic attacks. The patient had had the usual childhood illnesses. In early childhood, he had sustained a severe blow to the head which probably had no relationship to the present complaint. The patient also stated that he always drank an unusually large amount of water and urinated frequently. At about eleven years of age sudden attacks of muscular weakness coming on when he was made to laugh were the first real symptoms of his present illness. He would suddenly become limp all over and often the weakness would be of sufficient severity to cause him to fall to the ground. These attacks lasted only a moment or two and he recovered immediately. He related one instance when he was sitting on a curb with other boys and some one told a funny story. He began laughing, lost complete control of himself, fell backwards, bumping his head on the sidewalk, lacerating his scalp. He was able to stand up almost instantly and run to his home. A few months later, he began to complain of attacks of sleep which were irresistible. When a desire for sleep overcame him, he simply fell asleep no matter what he was doing. He found it necessary to take a nap after breakfast before he went to school. He fell asleep many times during the day while in school and during the next few years he slept a great deal of the time. He found himself falling asleep momentarily while walking or during conversation. Although previously he had been an average student, his school work became poor and his parents and teachers considered him lazy. The patient complained bitterly because his parents and teachers had hounded him all these years. At the inception of this disease, he gained considerable weight in a few months. He became depressed and gave up all his friends because he was ashamed of his inability to keep awake. He made every effort to keep from laughing, and if he thought some one might relate an amusing incident he would immediately walk away for fear that this might bring on an attack of cataplexy. He slept very poorly at night; became irritable and complained of terrifying dreams. During these years, he had been examined by a number of physicians who made various diagnoses and suggested many forms of treatment, all of which were unsuccessful. In September, 1930, he was examined at the Mayo Clinic, where a diagnosis of narcolepsy with cataplexy was made. A report from the Mayo Clinic states the following: "The patient was here for examination in September of 1930, at which time he was seen in consultation by Dr. John B. Doyle, who made a diagnosis of narcolepsy and prescribed ephedrin, ⅜ grain t.i.d. General examination was negative. Urinalysis, blood counts, blood Wassermann, Von Pirquet test, vision and eye grounds, x-rays of the head and chest and the neurological examinations were negative." With the use of ephedrin his symptoms improved considerably for about six months. He did better at his school work and he was able to keep awake most of the day. However, he soon found it necessary to increase the dose to ⅜ of a grain five times a day, and finally stopped taking the ephedrin because it made him extremely nervous. The cost also was considered excessive. The patient stated that he felt that he was much worse after stopping the ephedrin than before he began taking it. The attacks of sleeping and cataplexy became so frequent that rest periods were arranged in order to make it possible for him to continue to attend school. During the summer months, when he was able to take part in violent outdoor exercise, his condition improved.

When he was referred to me for examination, the patient was almost completely incapacitated. Physical examination in December, 1935, revealed an obese young man. He had a pasty complexion and appeared dull. He had a slight internal strabismus. The general physical findings were essentially negative. Blood pressure systolic 118; diastolic 80; hemoglobin 90 per cent; urine negative; the basal metabolic rate minus 24.

Through the courtesy of Dr. M. Nathanson, who was then carrying on some experiments with benzedrine, some of the compound was obtained and the patient was instructed to take 10 milligrams after breakfast and after lunch. The improvement was most remarkable. The daily number of attacks of sleep immediately decreased. He was able to keep awake during the greater portion of the day but still found that it was necessary to take a nap after each meal. The attacks of cataplexy disappeared almost entirely on this small dosage. After a month, the patient was instructed

to increase the dose to 20 milligrams after breakfast and lunch. With this dosage, the symptoms of the disease have entirely disappeared.

During the past five months, the patient has lost some thirteen pounds in weight. His appearance has changed from that of a dull, apathetic individual to one who is normally alert. It is interesting to note that in spite of the fact that his weight has decreased and that his general condition has so remarkably improved, the basal metabolic rate is still minus 22. The psychological examination made on April 18, 1936, by Dr. A. H. Hilden of the Child Guidance Clinic, Board of Education, Minneapolis, revealed that the boy had an I.Q. of 103. After taking benzedrine for a period of three months, he was again given a psychological examination and the examiner found him much more alert and an increase in one grade in the arithmetic computation score was noted. A report from the patient's various teachers revealed a unanimous opinion that the patient's general condition was markedly improved and that his tendency to sleep in class had disappeared. It had been hoped to carry on a psychological experiment with and without the use of benzedrine. The patient was given a number of placebo tablets and instructed to take these instead of his usual benzedrine for a period of three days. However, after one day, the boy refused to continue on these tablets and without consultation went back to the benzedrine so that it was impossible to determine whether or not the benzedrine affected his mental capacity.

The personality changes in this boy since the beginning of treatment with benzedrine have been most interesting. Whereas before December, 1935, the boy was almost without friends, refused to take part in any social engagements, was alone practically the entire time, since taking the benzedrine he has become very sociable, has made innumerable friends, has joined many social groups and has even been appointed program chairman of one of these groups. He has found this social life so engrossing that he has had very little time for his school work. On discussing with this boy the fact that his school work had not improved, he made the following comment, "After all, I have been asleep for the past eight years, and, while my teachers have promoted me, yet I learned very little. They passed me on only to get rid of me. This has made school work difficult for me now that I am again normal." Re-examination of the patient in May, 1936, revealed a tendency to be somewhat excitable. It was noted that he was unable to concentrate and it was my impression that the boy was receiving too much of the benzedrine. It was, therefore, deemed advisable to reduce the dose to 30 milligrams per day.

Case 2—The patient is a twenty-two year old male university student. He complains of chronic fatigue, pain over the heart, and attacks of sleepiness coming on during the day and lasting a few moments at a time. He also had had frequent spells of muscular weakness on excitement. The family history was essentially negative with the exception that his father, a man about fifty-five years of age, had a tendency to fall asleep when sitting quietly. The past history was unimportant. His difficulty began at the age of sixteen. There had been no acute illness or head injury preceding this onset. At this time, he noted that he frequently fell asleep, especially while sitting in the classroom and also immediately after meals. He soon noted attacks of muscular weakness on laughing, and stated that when he was emotionally aroused, he felt as if the muscles of his face became stiff and he was unable to talk. At one time, during a base-ball game he was suddenly excited and in attempting to throw the ball into the field, suddenly became limp. His arm dropped to his side and he was unable to continue for a moment. Many times he became "weak in the knees" on laughing or during sudden anger. He had fallen to the ground on two or three occasions. The condition was relatively mild and the patient was able to continue with his university work under difficulty. He stated that he often fell asleep while he was taking notes in the lecture room. On reading the notes later, he found the writing legible up to a certain point and then for a number of lines found nothing but scribbles. He also stated that on several occasions, when asked to recite, he heard the professor call his name but was unable to answer because he was apparently asleep. The patient was a well developed healthy young man. The physical examination was essentially negative. Blood pressure 120/80; urine was negative; hemoglobin 90 per cent; and basal metabolic rate minus 5. When this patient was first observed, the diagnosis of narcolepsy was not considered. Apparently the patient was not anxious to relate in detail his symptoms of sleepiness and cataplexy. It was only after discussing this condition with him several times that the actual condition was brought out. This patient has been on 20 milligrams of benzedrine-sulphate for the past two months with complete relief. He has not found it necessary to take a nap during the day at any time since taking the new compound. The cataplectic attacks have entirely disappeared.

Comment

There can be no question that the new compound, benzedrine-sulphate, is most effective in the treatment of narcolepsy. The fifteen cases reported in the literature to date and these two additional cases have all been most satisfactorily controlled with benzedrine. It is probably true that many mild cases of narcolepsy are incorrectly diagnosed, as happened in the second case here reported.

The possible toxic effects of benzedrine are not known. The drug has not been used long enough to be positive that no harm can come of it. It is not known whether or not the effect may be accumulative or possibly habit forming. However, Prinzmetal in a personal communication has stated that one of his patients with nar-

colepsy has used benzedrine for over two years; that the drug is still as effective as when started; that no deleterious effects have resulted; and that it has not been necessary to increase the dose. The first patient here reported has now been taking benzedrine for six months without any apparent ill effect and with no necessity for increasing the dose. In fact, in this instance, it has been possible to reduce the dose.

Benzedrine is a most powerful stimulant of the central nervous system. In mild doses, it does not increase the blood pressure markedly. It may produce some tachycardia and occasionally extra-systoles result from its use. It causes some dryness of the mucous membranes and seems to decrease the appetite. This may be one of the reasons for the loss of weight noted among patients using it. This compound has innumerable therapeutic possibilities. It is being widely used in various types of so called chronic fatigue, neurasthenia and in mild mental depression and allied conditions. In suitable cases of this nature, benzedrine has proved of remarkable value. However, as is true with all new drugs, caution is necessary. As has been stated, the possible toxic effects of this drug are not known and until such information becomes available it would be well to use benzedrine in small doses and then very cautiously.

Conclusions

1. Fifteen cases of narcolepsy satisfactorily treated with benzedrine have appeared in recent literature.

2. Two new cases are herewith reported also favorably controlled with benzedrine.

3. The therapeutic possibilities of benzedrine are pointed out and caution in its use is stressed.

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BRANCHIAL CYSTS*

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THE past year brought about a variety of experiences that, as an end-result, have left me with a deeper appreciation and a larger degree of satisfaction with my lot as a simple country doctor. As you know, I left my practice in December last year, and became associated with a surgeon in Chicago. Our relationship lasted but six weeks for it terminated by my associate's sudden and untimely death. Although a very brief period of time, it was sufficient to give me a perspective of what a very busy office in a large city entailed. Crowded waiting rooms, a continuous flow of patients through the office, made it impossible, in most cases, to give individual consideration. Long night office hours, busy mornings in the hospital, and traffic-jammed streets, composed the daily routine.

With this as a possible future daily life to be expected, I was glad to return to a country office and to live again. We experience greater enjoyment when things go well, but have more grief when things go bad. The cases that in my short experience in general practice seem to be the greatest trials are the obscure conditions. I am sure that all of you can immediately call to mind many such cases in the past that at the time were a thorn in your side.

It is true that today, with the ease of travel, it is a simple matter to refer patients to a specialist or large clinic for study; at times the solution of the problem is found. However, in many instances it is impossible at least for the time being to lay one's finger on any particular organic lesion and these patients return home and appear constantly in the office of their family doctor, with relatives and friends all clamoring for cause, prognosis, and results.

In a practice as limited as mine there have not been many outstanding cases of this nature.

*Presidential address before the Wabasha County Medical Society at its annual meeting July 9, 1936.

We have, however, one which has been, until recently, a great task.

On June 8, 1935, I was called to the home of a patient, a single male, thirty-one years of age, who complained of swelling and pain over the left lower parotid region. The pain was constant in character and exaggerated on opening the mouth.

At this particular time we were having a mild epidemic of mumps in Wabasha and this particular individual gave a history of exposure a number of times during the previous three weeks. He had, however, had mumps as a child.

There was present a mild pharyngitis and the patient complained of having had a mild upper respiratory infection for the past five days.

In spite of the history of a former mumps in childhood, I was satisfied the patient was suffering from an acute left parotitis, probably of epidemic type.

On the same evening he was admitted to the hospital and during his hospital stay of four days he had a mild fever for two days, when the swelling and tenderness disappeared.

The patient was entirely well for the next two weeks but on June 28, 1935, he again appeared at the office with a small amount of swelling over the inferior tip of the parotid gland with pain on opening of the mouth. He had a temperature of 99.2 degrees.

I then referred him to a nose and throat specialist. I felt that the patient must be having a recurrence of a non-specific parotitis, probably a salivary duct stone. Since the edema extended down over the angle of the jaw area, the consultant felt that both the parotid and the submaxillary glands were involved and reported there was no evidence of a salivary duct stone. After only a few days of mild edema, fever and pain, the patient recovered entirely, and no more was heard from him until August 17, 1935, when he again appeared at the office with an acute edema over the left angle of the jaw, severe pains, and a temperature of 99.2. Again he gave the history of the attack being preceded by a mild upper respiratory infection.

The blood picture at this time was normal except for a moderate leukocytosis of 12,600.

He was again admitted to the hospital and the treatment consisted of cold applications and oral hygiene. The induration this time seemed to involve the entire upper cervical triangle extending up to the lower half of the parotid region and posteriorly over the posterior auricular area. This firm induration persisted with a mild febrile course and leukocytosis of from 12,000 to 15,000 for about four days. It then began to disappear without any evidence of softening or fluctuation. He was discharged from the hospital on his tenth hospital day with still a small area of firm induration over the anterior cervical triangle directly beneath the angle of the mandible. During the following week, this induration disappeared leaving no palpable glands, masses or tenderness.

The patient was well until he again came to our office on September 29, with a rapidly developing induration over the same left parotid area, extending down into the left anterior cervical triangle. This time there was no history of a previous upper respiratory infection. We again admitted him to the hospital. After two days of symptomatic treatment and gradual improvement the patient was referred to the Mayo Clinic for observation and diagnosis. The patient remained there for one week and returned home with the induration entirely cleared up, no palpable mass of tenderness remaining, and no definite diagnosis.

On November 30, 1935, the patient again came to the office with a mild flare-up of the same condition, but this time remained up and about, attending to his duties. This time he suffered only a small amount of pain and after ten days the induration had entirely cleared up.

On January 10, 1936, he was seen by Dr. Bouquet, with a mild flare-up which cleared up after a few days without disability.

On March 3, 1936, the patient again appeared at the office, this time with a very marked swelling and pain, complaining of considerable dizziness and headache.

Again he gave us the history of a mild upper respiratory infection, about five days prior to the onset of symptoms. He was again hospitalized and on March 8 a small area of fluctuation was noted about one inch below the angle of the mandible. On March 9, this area was aspirated and 10 c.c. of a thin, yellowish pus was withdrawn. No tubercle bacilli or other bacteria were found in the fluid. A specimen was sent to the state laboratory for guinea pig inoculation, which proved negative.

The following day, under nitrous oxide gas anesthesia, an incision was made over the fluctuating area and a large amount of similar fluid was evacuated. The pocket of the abscess seemed to point up to the tip of the parotid. The entire cavity was packed with iodoform gauze, the area of induration subsided rapidly, and the patient was discharged from the hospital, on March 21, 1936. For the next week the opening kept draining purulent material, and we kept up daily insertions of iodoform packs to keep the external opening patent. The wound healed very promptly, leaving no trace of any induration or mass.

The patient continued to be well until March 28, when, within a period of three hours, a severe induration returned accompanied by severe throbbing headaches, dizziness and local, dull aching pains. He was again admitted to the hospital and on March 30 the neck was again opened at the same site, with drainage of considerable pus.

This time the drainage constantly continued and an indurated mass remained palpable immediately beneath the angle of the mandible, extending up to the parotid tip. As long as drainage was maintained and the fistula kept open the patient was comfortable.

On May 7, under nitrous oxide and ether we injected the fistulous tract with methylene blue and incised the fistulous tract with a wide incision.

We traced a fistulous tract up to the parotid gland through the inferior tip of the gland, then directly posteriorly below the sterno-mastoid muscle. Below

this muscle and just above and lateral to the carotid sheath a small cyst was uncovered, about 3.5 cm. in diameter. The fistulous tract entered this cyst at its very superior aspect. The wall was about 2 mm. thick, and the entire cyst and fistulous tract was embedded in dense induration. The cyst was removed in its entirety after considerable difficulty. The cyst cavity contained a yellowish, thin purulent material. The pathological report on the specimen was "squamous epithelium lined cyst wall, a branchial cleft cyst."

The post-operative course was entirely uneventful and the patient was discharged on the eleventh post-operative day with the wound completely healed.

Earlier in the course of this man's history we had considered the possibility of a congenital cyst, branchial or epithelial, but felt that it could be ruled out since during remissions no mass or induration was palpable over the cervical region.

At the operation it was easy to understand why the cyst could not be felt during a remission, because its position was much too deep beneath the sternomastoid muscle to be palpated externally.

In reviewing the literature on lateral branchial cysts we find that during the first two weeks of embryonic life five branchial arches are formed on the lateral neck of the embryo. These produce ridges separated by grooves and correspond to the gill arches of the fish.

By the sixth to seventh week of embryonic life, four definite grooves and pouches are formed. The first two are much the larger and overlap the other three. These pouches close over and form sinuses and under normal conditions these sinuses close over and the epithelium is absorbed.

Infrequently a sinus may remain, generally the second, and form a cervical cyst. Likewise a pinching off and non-absorption of the endodermal lining of the pharyngeal pouch on the inside of the embryonic neck may produce internal cysts, which, if the wall is thin and breaks through, results in a branchial fistula.

The tonsils, thymus and parathyroid glands develop from the lining membrane of the embryonic pharyngeal side wall. Therefore, cysts of ectodermal origin have a squamous epithelial lining and cysts of endodermal origin have a columnar epithelial lining. Occasionally a cyst may have both types of epithelium linings.

Branchial cysts may be divided into four classes:

1. Cysts with no internal or external opening.
2. Cysts with a fistula opening internally.
3. Cysts with a fistula opening externally.
4. Cysts and fistulæ with both external and internal openings.

Baily classifies them according to position as superficial, deep, auricular, parotid, sublingual, submaxillary, pharyngeal or tracheal. Others classify them according to the cleft giving origin.

In each case reviewed in the literature, the most constant is the pre-auricular with no tenderness or pain. As the cyst progresses in size, symptoms may occur from pressure. Hoarseness, coughing, difficulty in swallowing or breathing may be experienced, depending on the direction of the growth. Pain and acute induration are infrequent and always due to secondary infection.

Cysts, excepting those preauricular, are anterior to or under the sterno-mastoid muscle and have never been known to be bilateral.

Cysts with internal fistulæ may give an intermittent history. The fistulous tract usually drains into or near the tonsillar fossa. It has several times been discovered only after a tonsillectomy. External fistulous openings are generally preauricular or submandibular. Cysts with both interior exterior fistulæ are very rare.

To differentiate in diagnosis from adenitis it is well to remember that adenitis is generally bilateral, is accompanied by a history of upper respiratory or dental infection and tuberculosis, and bacterial examination usually establishes the diagnosis.

Where fistulæ are present, x-ray examination following lipoidal injection may prove of some value. Tuberculous tracts are very irregular in outline.

Hemangiomata of the neck usually disappears upon pressure. Dermoid cysts of the neck may be differentiated by the x-ray and microscopic examination.

Clinically, it is difficult to differentiate a branchial cyst from a sublingual epithelial cyst, which may have an identical appearance. Microscopic examination is the only means of differentiation.

The only recommended treatment for branchial cysts is a complete excision of the cyst and fistula. One should be mindful that a branchial cyst has small pedicles and during enucleation these may be lost. Unless the entire cyst is removed, recurrence is the rule.

CASE REPORT

PERFORATED GASTRIC ULCER AND MECKEL'S DIVERTICULITIS

A. L. PERTL, M.D.

Canby, Minnesota

A SCHOOL girl, seventeen, was seen October 31, 1936, when she had an attack of so-called slight indigestion. Her appetite had been fair and she complained only of slight belching after meals. The bowels were normal. Following her visit she continued to work as usual at home and to attend school.

On November 3, immediately after finishing her lunch at school, she was seized with a sudden sharp pain over the entire abdomen, more marked in the lower right quadrant, which caused her to double up in severe agony. The attack occurred at 12:30 p. m. Her temperature when seen was 97.4, pulse 116, respiration 24. She had a marked pallor but no sign of collapse. This attack lasted about twenty minutes. On examination there was definite pain, tenderness and rigidity on the entire right side, more so from the navel downward. The urine and leukocyte count were normal.

She was immediately hospitalized but operation was delayed until the parents could be notified and their consent given. At 2:30 p. m. morphine sulphate gr. 1/6, atropine sulphate gr. 1/150 were given but within thirty minutes she had another similar attack of pain which lasted, however, only ten minutes.

At 3:00 p. m. she was taken to the operating room and a right mid-rectus incision was made. Upon opening the abdomen slight watery fluid escaped containing some flocculent material. The cecum was markedly congested posteriorly, and over this area there was some adherent fibrinous exudate. The appendix was only slightly injected. Twelve inches from the ileocecal junction was found a Meckel's diverticulum, four inches in length and one inch in diameter, the proximal half patent and smooth while the distal half was closed and its peritoneal serosa thickened and papillary in appearance. The diverticulum was removed.

The incision was then extended upward and at once more exudate and injection was noted in the epigastric area. Further search revealed a perforation about one-eighth inch in diameter from an ulcer on the anterior surface of the stomach near the pylorus.

The ulcer area was about three-fourths inch in diameter. The perforation was sutured and the omentum plastered over the involved area. The abdomen was closed without drainage.

The patient made a rapid and uneventful recovery and was discharged from the hospital on November 13, 1936. A modified Sippy diet was recommended to be carried out at home.

A. W. Adson, M.D.

President, 1937

MAY I wish all my colleagues a happy new year, and that their joys and successes for 1937 will outnumber their sorrows and disappointments. Although we have lived through times rendered strenuous by economic distress, it still behooves us all to continue with our studies in order to be informed on the progress of medicine. We should avail ourselves of postgraduate opportunities for study and we should attend county, district and state meetings whenever possible. Compensation for professional services is essential that we may live, but pecuniary compensation cannot compare with the personal satisfaction that comes in having made the correct diagnosis and in having instituted the proper treatment for those who consult us when sick and depressed.

EDITORIAL

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Lobar Pneumonia

CONSIDERABLE space in this issue of MINNESOTA MEDICINE is devoted to the subject of lobar pneumonia with emphasis on the serum treatment of the disease. Minnesota is about to follow the lead of other states, notably Massachusetts and New York, in a campaign for the purpose of reducing the mortality of the disease. This campaign includes drawing the attention of the public to the importance of caring for acute respiratory infections and the significance of the beginning signs of pneumonia: chills, fever, pain in the chest, and blood-tinged sputum. The attention of the profession is being called to the value of pneumonia serum, especially in Type I and Type II pneumococcus pneumonia. It has been firmly established that the use of serum in these types of pneumonia will reduce the mortality of the disease 10 per cent, if used within the first four days of the disease and considerably more if used in the first twenty-four to forty-eight hours of the disease.

The decision of the State Board of Health to aid in the typing of cases and in providing for the free distribution of pneumonia serum to those unable to afford its relatively high cost, is highly commendable. The decision to limit the free distribution of the serum to typed individuals is reasonable.

A word of warning is perhaps in order as to the precautions necessary before horse serum is administered intravenously. Those known to be allergic to horses or who have had horse serum inoculations should not be given pneumococcus serum. All patients should have the preliminary conjunctival and subcutaneous test for sensitivity and the first intravenous injection should be small and given slowly in any event with adrenalin handy. The small volume on "Lobar Pneumonia and Serum Treatment" by Lord and Heffron, reviewed in this issue of the journal, is strongly recommended to those contemplating the use of pneumonia serum.

In our enthusiasm for serum therapy of pneumonia we should not forget the importance of rest and nursing in pneumonia. Morphine, or perhaps preferably codein, is the most valuable drug and an occasional enema rather than the use of cathartics is preferable. Oxygen therapy is life saving in some cases.

Artificial pneumothorax has given some promise of being of value, but has not been firmly established. Certainly it should not be attempted by the tyro nor without x-ray evidence of unilateral involvement.

It is unbelievable that bronchoscopy with suction should have even been suggested for the treatment of pneumonia in view of the pathologic process present.

Lobar pneumonia is a disease which merits publicity among the laity and profession and combined efforts should result in the saving of many lives.

Pneumococcus Typing by the Neufeld Reaction

THE typing of pneumococcus in the sputum has come to be an important laboratory aid in the diagnosis and treatment of lobar pneumonia. Pneumococcus typing had been considered one of the more difficult laboratory procedures until the introduction of the Neufeld reaction by Sabin in 1933. This method applied on the "typical" lobar pneumonia sputum is by far the simplest and perhaps the most accurate now in use. Sabin went so far as to claim that it is "a method that is simple and reliable, that dispenses with the use of mice, and by which a correct determination of type is possible within a few minutes after a suitable specimen of sputum has been obtained."

Since it is recognized that the effectiveness of serum therapy in lobar pneumonia is dependent upon the rapidity and accuracy of the method employed in pneumococcus typing and because the Neufeld reaction appears to meet these requirements in trained hands, a systematic campaign of introducing this method among the hospitals, laboratories and individual physicians and technicians through educational exhibits, motion picture demonstrations, circulars, and personal visits, has been carried on during the past twelve months.

These efforts, though mainly of a commercial character, are laudable and the thanks of the profession are due the promoters for their part in the broad program of pneumonia control.

One unfortunate result of this widespread and perhaps uncensored publicity, however, is the impression which has apparently crept into the mind of the average practitioner that the Neufeld reaction of pneumococcus typing is not only 100 per cent efficient on any sort of sputum but but can be performed by any individual, technician or physician, without proper training or necessary laboratory facilities. This is far from our actual experience. Many of the sputa submitted for this test are not "typical" while others contain too few of the organism or are mixed with too many contaminants to be suitable for the direct reaction. Consequently, in a number of actual instances, the immediate Neufeld reaction can not be obtained. Many of these sputa, when injected intraperitoneally into the mouse, within a few hours, yield a pure growth of pneumococci which readily permits the performance of the test.

Therefore, it would be highly desirable to culture routinely every specimen of sputum submitted for the direct Neufeld reaction, and inoculate the mouse for later typing. By this added procedure, its usefulness would be greatly multiplied. Parenthetically, it may be stated that this method may be admirably used on exudate from the pharynx in adults who are unable to expectorate or on material obtained on the swab from the throat of infants. Type I or II pneumococcus identified in this manner is almost certain to be the organism responsible for the pneumonia while pneumococci of other types are more likely to be saprophytic, and final diagnosis should be reserved until typing on the sputum could be obtained.

The Neufeld reaction introduced by Sabin is admittedly the most rapid and practical at our command at the present time. However, in order to derive the greatest possible aid from it (1) scrupulous care should be observed in selecting samples of the sputum and (2) when a negative result is obtained, it should not be considered as conclusive but (3) confirmation should be had through the mouse method (using the same technic), which can be carried out within a few hours.

The Neufeld reaction is a reliable diagnostic procedure only in experienced hands and where proper laboratory facilities are available.

KANO IKEDA, M.D.

Syphilis Control

IT IS not generally appreciated that syphilis has now supplanted tuberculosis in this country as the leading cause of death among the contagious and therefore preventible diseases. In 1934 there were some 17,700 reported deaths in this country from tertiary syphilis and the number was doubtless considerably in excess of this, for members of the profession are often loath to state syphilis as the cause of death on a death certificate. It is estimated that 7,000,000 individuals in this country have syphilis at any one time. When we consider that about 15 per cent of the inmates of asylums are there because of this infection, the number of congenital syphilitic patients who bear the stigma of the disease from birth, and the number of abortions resulting from the disease, we obtain some idea of the

toll that this one disease exacts in misery and expense in our country alone.

Syphilis control must be attacked from several angles. Its prevention is largely a sociologic problem; its cure, a medical one.

Education is an important factor in any proposed campaign. At the risk that familiarity breeds contempt the public must be informed as to the nature of the infection, its prevalence, mode of infection, and the fact that it can be cured. The indication of the recent change in attitude of the laity toward the public discussion of syphilis makes education on the subject more feasible.

Surgeon-General Thomas Parran, Jr., of the United States Public Health Service has recently launched a drive against syphilis. Considerable success may be expected from such a campaign if the results in Stockholm may be considered a criterion. As the result of an antivenereal drive there in 1919, the number of new cases reported in one year has been now reduced from forty-four to two per 10,000 of population.

To further the cause of publicity, the American Social Hygiene Association has designated February 3, 1937, as National Hygiene Day. A meeting will be held on that date in New York City, which will be addressed by Dr. Ray Lyman Wilbur, president of the Association, and by Surgeon-General Parran. Similar meetings will be held on the same date all over the country and it is hoped that publicity will be furthered by a nation-wide radio hook-up to disseminate addresses on the subject by government officials and civic leaders.

The importance of measures directed towards the prevention of syphilis cannot be overemphasized. It should become well known, especially to the youth of this country, how the disease is contracted and the part that alcohol so often plays through its effect on self-control. How much the actual prevention of contagion by prophylactic measures should be emphasized has long been debatable but without doubt it has its place.

The stamping out of the disease (if this is possible) depends upon the coöperation of the medical profession, venereal clinics and public health authorities.

The present set-up for the control of syphilis is well conceived. Several factors, however, have operated against its success. The medical profession has doubtless been remiss in the reporting of cases. Too many physicians fail to realize the importance of reporting this contagious disease. Only by knowing its prevalence is proper legislative appropriation likely to be obtained. Only by detailed reports on the part of physicians can sources of infection be traced and uncured patients contacted. Recently too, the United States Public Health Service has complained of the lack of coöperation in the reporting of cases on the part of health departments. Then again, the legislatures have been niggardly in their appropriation of funds for the social service work so important if this disease is to be controlled.

The present publicity campaign designed to call attention to the seriousness of the problem of syphilis, although it will not result in the stamping out of the disease, should bear some fruit and should stimulate all concerned, physicians included, to do their part.

The Use of Trichloroethylene for General Anesthesia

Trichloroethylene for use by inhalation in the treatment of trigeminal neuralgia is accepted for inclusion in New and Non-official Remedies. Recently, however, trichloroethylene has been used as a general anesthetic. The product used for this purpose differed from that used in the treatment of trigeminal neuralgia. It contained no added diluent or stabilizing agent and the boiling points were more closely defined. The evidence for the usefulness of this agent in general anesthesia consists of one experimental and one clinical report, both by the same group of workers. Jackson and his associates claim these advantages for trichloroethylene (for anesthesia): it is safe where there is any fire hazard (cautery), because it is noninflammable and nonexplosive; the fumes do not spread; and it is more pleasant than ether. Its chief danger lies in its rapid effect. The clinical report of 300 anesthesias and analgesias included twenty-five dental cases, twenty-five cases of removal of venereal warts and 198 cervical cauterizations. The authors state that as yet they have not used trichloroethylene in laparotomies or other major surgical procedures (except in experimental animals). The Council held that the available evidence does not justify the acceptance of trichloroethylene for use as a general anesthetic and postponed consideration to await (a) solution of the question of potential toxicity of decomposition products of the drug and (b) development of the evidence to substantiate the claims for its clinical use as a general anesthetic. (J.A.M.A., Oct. 17, 1936, p. 1302.))

UNIVERSITY OF MINNESOTA—CENTER FOR CONTINUATION STUDY

Post-Graduate Medical Institute

THE Center for Continuation Study of the University of Minnesota in coöperation with the Medical School and the Minnesota State Medical Association will offer a series of post-graduate medical courses for practicing physicians from January 17 to February 13, 1937. For some time the University has provided opportunities for extended graduate instruction through the facilities of the Graduate School and for short courses on the campus and throughout the state through the agency of the Extension Division. These medical courses, which will be offered by the Center for Continuation Study, are the first of their kind. They are planned primarily for practicing physicians who desire to spend a short period of time in serious and intensive study in internal medicine, surgery, pediatrics, obstetrics and gynecology. The Center for Continuation Study on the campus makes it possible for the first time for post-graduate students to attend school in their own building with their own living quarters, faculty, curriculum, and library facilities. In the past, it was necessary for practicing physicians in the northwest to travel great distances and with considerable expense to obtain the type of instruction which will now be offered near their homes. It is believed that our physicians will welcome this opportunity and for this reason everyone is urged to read this announcement with care so that there will be no disappointment through failure to properly enroll and profit from the instruction.

Subjects

The first week, from January 17 to January 23, will be devoted exclusively to instruction in Traumatic Surgery; the second week, from January 24 to January 30, to Obstetrics and Gynecology; the third week, from January 31 to February 6, to Pediatrics; and the fourth week, from Ferbuary 7 to February 13, to Internal Medicine. It will be possible for any post-graduate student to enroll in one or more of these courses. Preference will be given to those enrolling in the entire series although single week reservations will be welcomed. Students are urged to live in the building, which provides splendid facilities for both instruction and living accommodations. In addition to the full-time enrollment, a limited number of physicians from the Twin Cities and vicinity may be accepted for part-time enrollment. Registration details will be found in this bulletin.

Program

In planning the courses, the program has been divided on the basis of regions, systems, or types of disorders. New chairmen will be in charge of each day's program and the faculty which will assist them will function as a unit. In this way, each day's program will represent a complete practical survey of one subject. The courses will consist of lectures, clinics, demonstrations, ward walks, seminars, and practical work. A special feature will be the opportunity for each student to present his own problems to a group of specialists who are coöperating in this project. The faculty has been selected from the Medical School and the Mayo Foundation. While the fundamental phases of each subject will be discussed, the main emphasis will be placed on the availability of the material to the needs of the general practitioner.

Special Features

New registrations will be completed on each Sunday prior to the start of the week's work for those who have made advance reservations. Students are urged to come, at this time, and receive their programs and room assignments. The exercises will start each day at 8:00 A. M. and continue until 5:00 P. M. Three nights of each week, namely Monday, Wednesday and Friday, will be given over to special lectures in the Center. It is to be noted that all meals will be served in the Center. Although a garage is attached, the use of an automobile will not be necessary, as all of the instruction will be given in the Center, at the University of Minnesota Hospitals, or the Minneapolis General Hospital, which can be easily and quickly reached by streetcar or cab. Prospective students are urged not to plan any other activities while taking the courses, as, in addition to their own schedule, they will be expected to attend the regular university medical seminars, conferences, and other meetings which do not conflict with their special program.

The following advance program is submitted for consideration.

Traumatic Surgery

January 17 to January 23, 1937

Courses

8:00 A. M. to 5:00 P. M.

	Subject	*Faculty*
Sunday	Registration and Room Assignment	
Monday	Spine, Rib and Pelvic Injuries	Wallace Cole and staff
Tuesday	Shoulder, Arm and Elbow Injuries	O. J. Campbell and staff
Wednesday	Forearm, Wrist and Hand Injuries	Richard R. Cranmer and staff
Thursday	Head Injuries	Arthur A. Zierold and staff
Friday	Hip, Thigh and Knee Injuries	Edward T. Evans and staff
Saturday	Leg, Ankle and Foot Injuries	Edward A. Regnier and staff

Lectures

7:00 P. M. to 9:00 P. M.

Monday	First Aid in Fractures	Carl C. Chatterton
	Abdominal Injuries	O. H. Wangensteen
Wednesday	Treatment of Shock	H. A. Carlson
	Treatment of Infected Wounds and Fractures	M. H. Manson
Friday	Treatment of Jaw Fractures	Carl W. Waldron
	Nerve Injuries	W. T. Peyton

Obstetrics and Gynecology

January 24 to January 30, 1937

Courses

8:00 A. M. to 5:00 P. M.

	Subject	*Faculty*
Sunday	Registration and Room Assignment	
Monday	Diseases Complicating Pregnancy	R. T. LaVake and staff
Tuesday	Diseases of the Urinary Tract in Pregnancy	R. E. Swanson and staff
Wednesday	The Toxemias of Pregnancy	R. E. Swanson and staff
Thursday	Genital Tract Tumors	S. B. Solhaug and staff
Friday	Cancer of Genital Tract	J. A. Urner and staff
Saturday	Difficult Labor	L. A. Lang and staff

Lectures

7:00 P. M. to 9:00 P. M.

Monday	Endocrinology in Obstetrics and Gynecology	J. C. Litzenberg
	Questions and Answers	Staff
Wednesday	Relief of Pain in Labor	R. D. Mussey
	Questions and Answers	Staff
Friday	Obstetric Problems in Country Practice	Martin Bergheim, Hawley, Minn.
	Questions and Answers	Staff

Pediatrics

January 31 to February 6, 1937

Courses

8:00 A. M. to 5:00 P. M.

	Subject	*Faculty*
Sunday	Registration and Room Assignment	
Monday	Clinical Disorders of the Blood. Diagnosis and Treatment of Diseases of the Heart including Rheumatic Fever	W. H. Thompson, P. F. Dwan and staff
Tuesday	Newer Aspects of Nutrition and Metabolism	Arild Hansen and staff
Wednesday	Care of the Premature Infant and Special Problems of the Neonatal Period	W. Ray Shannon, Robert Rosenthal and staff
Thursday	Diseases of the Upper Respiratory Tract and Lungs	E. J. Huenekens, A. V. Stoesser, L. R. Boies and staff
Friday	Nervous Condition and Behavior Problems in Childhood	J. E. Anderson, B. Bryngelson, S. A. Challman, H. S. Lippman, M. Seham and staff
Saturday	Contagious Diseases—Their Prevention and Treatment	E. S. Platou, C. A. Stewart and staff

Lectures

7:00 P. M. to 9:00 P. M.

Monday	Pathogenesis and Treatment of Edema	Irvine McQuarrie
Wednesday	Control of Infections of the Urinary Tract	Henry F. Helmholz
Friday	Convulsive Disorders in Childhood, including Epilepsy	Irvine McQuarrie

Internal Medicine

February 7 to February 13, 1937

Courses

8:00 A. M. to 5:00 P. M.

	Subject	*Faculty*
Sunday	Registration and Room Assignment	
Monday	Modern Concepts of the Diagnosis and Treatment of Heart Disease	Moses Barron and staff
Tuesday	Diseases of the Respiratory Tract including the Modern Treatment of Pneumonia	Reuben Johnson and staff
Wednesday	Gastro-Intestinal Disorders. Gastroscopy	J. B. Carey and staff
Thursday	Common Errors in the Treatment of Diseases of the Skin	H. E. Michelson and staff
Friday	Practical Considerations in Endocrinology. Treatment of Diabetes	A. H. Beard and staff
Saturday	Diseases of the Blood, including the more simple Laboratory Procedures available to the General Practitioner	Frank J. Heck and staff

Lectures

7:00 P. M. to 9:00 P. M.

Monday	Psychiatric Pitfalls for the General Practitioner—in the Neuroses—in the Psychoses	J. C. McKinley, R. W. Ahrens
Wednesday	Arthritis	To be announced
Friday	Significant Therapeutic Advances	Eight speakers to be announced

The complete schedule, including the names of all the instructors, their subjects, and the general university exercises, will be issued at the time of registration.

Facilities of the Center

The cost of room and board per week per person is given below:

Double room, without bath	$13.50
Single room, without bath	15.00
Double room, with bath	15.00
Large bay-window, double room, with bath	16.00
Suite for four persons (two bedrooms, living room, and bath)	17.00
Suite for two persons (bedroom, living room, and bath)	18.00
Special suite for two persons (bedroom, living room, and bath)	19.00

This does not include the tuition fee for each course. Meals may be obtained separately by those not living in the Center.

Registration and Tuition Fees

The tuition fee for each week's course will be $15.00 for full-time enrollment. An advance registration fee of $3.00 must be sent with the application. This registration fee will be deducted from the tuition after the registration is completed. Address all applications or requests for information to the Director of the Center for Continuation Study, University of Minnesota, Minneapolis, Minnesota. The enrollment is limited to thirty students for each week. After the enrollment is completed for any one week, applications which have not been filled will be given preference on succeeding weeks if the student so desires.

Certificate

Upon satisfactory completion of any one or more weeks of full-time enrollment a certificate of attendance will be issued by the Board of Regents of the University of Minnesota, upon the recommendation of the Director of the Center and the Chairman of the Post-Graduate Medical Institute.

MEDICAL ECONOMICS

Nationalized Medicine Is It Coming?

WITH the presidential election over and a resounding endorsement of New Deal policies including the Social Security program recorded, the question arises among social service workers, economists, physicians:

Will the administration ask for health insurance to round out its social security program?

The program now covers old age, unemployment, public health, special aid to crippled children and to mothers and babies. The logical step ahead, according to some of the president's own men, is insurance against sickness.

No New Taxes

President Roosevelt assured the medical profession, in a pre-election speech at Jersey City, that it had nothing to fear; no change in our system of medical care would be contemplated without first consulting the profession. The wishes of the profession would be considered.

But November was hardly over and the election returns hardly in before stories predicting a move for sickness insurance began to appear in key newspapers. One was in the *Washington Post,* Washington, D. C., November 23. Another was in the *New York Herald Tribune.*

Both appeared to come from the same source, the Department of Information of the Social Security Board.

"Third Project"

"A third Federal welfare project—health insurance—," said the *Post,* "as large as either the old-age benefit insurance or the unemployment insurance programs, may be initiated by the Social Security Board in the near future, it was learned last night.

"The board has begun a study looking to proposal of this major addition to the social security system now operating. *Health insurance would provide both medical services and cash payments in partial compensation of wage-losses due to illness* . . . (Italics are ours.)

"No bill has been drawn up on the subject and no commitments on sponsorship of health insurance have yet been made, a board spokesman said last night.

Economist Hamilton To Study

"Authority of Section 702 of the Social Security Act has been invoked to allow a research study of the subject and experts are now starting this work.

"Walton Hale Hamilton, economist, head of the research division and former member of the National Industrial Recovery Board, will direct the study. . . .

"President Roosevelt's promise to avoid new taxes at the next session of Congress may mean the board's findings or recommendations will be withheld for a time. . . .

Costs Would Be High

"Some experts hold that comprehensive health insurance would cost the equivalent of more than five per cent of pay rolls. . . ."

The tax for unemployment insurance under existing social security legislation will run to three per cent of pay rolls. This one is payable by the employees. Costs of old-age benefits will run to six per cent of pay rolls to be paid equally by employers and employees.

"Recommendations are not likely to contemplate raising the entire cost of health insurance from payroll taxes," the story concludes.

He Wanted Standard Hats

Readers of these columns will remember Walton Hale Hamilton, the apostle of standardization, who proposed at one time to standardize food and women's hats (*Medical Economics,* 1935). A scheme for extension of medical care which involves standardization of doctors and medicines will have no horrors for Mr. Hamilton.

Washington Merry Go Round, syndicated news service, which usually appears to have some basis for its observations, recently predicted a "knock down, drag-out fight on health insurance between administration men and the doctors."

Editorial comment has been general throughout the country, and most of it conservative.

Will Provoke Hostility

Said the *New York Herald Tribune* of Tuesday, Dec. 1:

"These objections (to health insurance by organized medicine) when examined in detail are enough to line up the average conservative American layman behind the medical profession in its hostility to compulsory insurance. But mere hostility is not enough. The gap in medical care must be studied and a sound remedy devised. Otherwise the 'socializer' who has the bit in his teeth will prevail. To save the medical profession and the nation from the afflictions of another European institution, about as well suited to our temper as peacetime conscription, it seems to us that doctors will have to consider forthwith, how medical nursing and hospital service can be rapidly extended in conformity with the public interest and with their professional ideals."

Obstacle

The chief obstacle, apparently, in the way of immediate introduction of health insurance into the social security program is the cost. It is, in fact, a tremendous obstacle and one which even experienced New Deal spenders may not be able to hurdle.

If a bill for health insurance should be introduced at Washington, new taxes would be needed and the President has promised that he will ask for no new taxes.

Oklahoma Flyer

If similar legislation is introduced in the individual states, it is almost certain to meet with an even less cordial reception in most states than a bill for a partial measure of state medicine, so-called, received in the Oklahoma legislature, recently.

A hospitalization bill was passed by a vote of 76 to 23, in the House according to the *Tulsa Daily World*. This was the state's first flyer into state medicine. It provided for hospitalization and treatmment of indigents by the state and called, originally, for an appropriation of $500,000 for 1937 and 1938. The bill passed the house with an appropriation of $150,000 for the first six months of 1937, and drew down a bitter attack on the mounting costs of care for the indigent of which this last provision was apparently a final straw.

Sick Taxpayers

Said Representative Wallace Hughes of Texas county:

"If we don't curb these appropriations we are going to have all the taxpayers (beside the indigent) in bed."

Said Representative Tom Kight.

"We are dealing with the most paternal legislation that has ever come before this house. There is no more suffering today than there was three years ago. It has ever been thus and ever will be thus.

"Let's keep our feet on the ground. Let's not go wild on this thing. I want to see how this machinery is going to work out . . ."

The Machinery

The machinery was promptly geared to permit chiropractors, osteopaths, "drugless healers and practitioners" of all kinds to participate.

To receive care under the act it will be necessary only for the indigent to get the approval of the county commissioner of the district in which he resides.

Final decision on who is to receive care will rest, not with the county welfare boards and the county medical societies as originally planned, but with the county welfare boards and the county commissioners.

Prospect In Minnesota

It should be added, here, that the prospect for a much sounder handling of public welfare work is bright in Minnesota.

Indications are that the Interim Committee of the Legislature which is now preparing its report for the regular session will recommend free choice of physician for the indigent patient and proper medical participation in the determination of the needs of the sick poor.

It is hoped that official recognition of the responsibility of the community for payment for medical care of the indigent will again be explicitly acknowledged in this legislation. That any new state machinery will be set up for the delivery of medical care for the indigent is highly improbable in Minnesota, or that any machinery will be considered for the establishment of health insurance.

The Council Meets

AT the request of Surgeon General Thomas H. Parran, who has asked coöperation of medical societies everywhere, appointment of a Committee on Syphilis and Social Diseases was authorized by the Council. The committee will guide a public health education campaign on the subject, assist in the general campaign to secure early diagnosis and treatment. Dr. S. E. Sweitzer, Minneapolis, will be chairman of the new committee.

Classes for crippled children who are unable to attend regular schools are planned by Dr. H. E. Hilleboe, State Board of Control, to be financed with Social Security funds for crippled children.

The project was explained to the Council by Dr. Hilleboe and officially approved.

Union Doctors?

Incidentally, Dr. Hilleboe also asked the Council for its attitude on the question of physicians as members of trade unions. A number of physician employees of state institutions have joined unions organized by other employees of the institutions.

The Council went on record as officially opposed to membership of physicians in any unions though it could not forbid its members from entering such unions.

Membership of a physician in any organization that may require him to go on strike with other employees or which may in any way hinder him in the care of the sick was regarded by the Council as essentially a violation of the ethics of the American Medical Association. A stipulation in the contracts of state institutions was suggested forbdding neglect of duty on the part of physicians, in case of strike.

Medical Defense

A medical defense system for members works admirably in the New York State Medical Society, Dr. B. J. Branton, Chairman Medico-Legal Advisory Committee and Dr. W. L. Burnap, committee member, reported to the Council. A detailed written report on the New York system will be prepared, at the Council's request, for careful study as to possible feasibility at some future date in Minnesota.

* * *

Results of investigations by Councilors of a complaint that physicians were refusing to cooperate in securing physical examinations for nursery school children in WPA nursery schools were reported.

The investigations fortunately showed that, in practically all instances, the complaint was based, not upon fact, but upon misinformation or misunderstanding on the part of the nursery school administrators.

Nursery School Problems

The discussion brought to light the fact that there are now 32 nursery schools in Minnesota operated by WPA. Problem children of all kinds as well as children of relief clients are received as pupils. School lunches and extra nourishment are given to the children according to a carefully worked out plan for all the schools.

No funds are available through WPA for medical examination of the children. Special arrangements must be made in each community through county funds or special funds raised by local organizations or appropriations from local school boards to take care of this important phase of a nursery school program.

* * *

A request for names of physicians who might consider employment on a government resettlement project prompted a statement of policy on this and similar requests by the Council. The policy is this: that local men be used wherever possible, recognizing always that, in cases where the resettlement project is at a great distance from any local practicing physician, full time men must be employed for the purpose.

Refer To Secretary

Dr. Diehl, who was present at the Council meeting, asked for advice as to his own handling of requests for physicians that come to his office at the University. It was determined that, for his convenience and for better determination of the nature of each proposal for employment, all such requests should be posted at the University with the directions that the applicant consult the state secretary at association headquarters for information and advice.

* * *

The Council instructed Secretary Meyerding to write senators and representatives requesting their approval for a reasonable appropriation to maintain the Army Medical Library at Washington, D. C., and its Index Catalogue. Both are regarded as vitally important to the medical profession of the United States.

* * *

Appointment of Dr. O. E. Locken, Crookston, to the Board of Certification of Public Health Nurses was approved.

Industrial Medical Conference

ONE of the most significant features scheduled for the 84th Annual Meeting of the Minnesota State Medical Association at the St. Paul Auditorium next May 3, 4 and 5 is the Industrial Medical Conference.

This conference will begin with a dinner Tuesday evening, May 4, at which Voyta Wrabetz, Industrial Commissioner of Wisconsin, will speak.

All sessions Wednesday will be devoted to industrial surgery, industrial injuries and medical hazards of industry.

A group of famous surgeons and medical men whose experience in this increasingly important phase of medicine is outstanding will be there. Among them are: Michael L. Mason, Chicago; J. M. Wheeler, New York; and Maxwell J. Lick, Erie, Pa.

This conference has a special significance because it is arranged and sponsored by Organized Medicine. Similar conferences have been held by insurance companies. They were valuable conferences but they gave rise to conjectures on the part of thoughtful observers concerning the very real possibility that industrial medicine might someday slip from the control of the medical profession and separate itself from legitimate medical teaching in the schools.

The May conference in St. Paul is the answer to such conjectures in Minnesota.

Medical Survey

A SURVEY of the costs of medical practice, in general, including medical education, postgraduate work, attendance at meetings and postgraduate courses, office overhead, expert assistance and transportation has been approved by the Council for Minnesota.

After considerable discussion on the part of a preliminary committee to study the matter and an inquiry into possible sources of funds and assistance for such a survey, the Council determined at length to confine the study, initially, to information that can be obtained by and through members of the association.

Members in all parts of the state are to be asked to volunteer their services over a period of a year to compile actual figures on the costs of medical practice.

No Figures

Such figures have never been secured or compiled before in all the mass of accumulated data of all kinds on medical care.

They will serve to show legislators, county officials and others who may in the future be concerned with the determination of fees for medical care just exactly how much it costs the doctor to care for his patients. That means, of course, his indigent as well as his paying patients.

Committee

The preliminary committee which reported to the Council included President-Elect A. W. Adson, President W. W. Will and Secretary E. A. Meyerding. The permanent committee to conduct the survey as it was tentatively shaped at this meeting will include the preliminary committee members and Dr. T. H. Sweetser, Minneapolis; Dr. George Earl, St. Paul; Dr. H. S. Diehl, Dean of the Medical School; and Mr. R. R. Rosell, assistant to the secretary, the latter two being ex-officio members.

Group Hospitalization

GROUP hospitalization is on the march, says Dr. Charles B. Reed of Chicago, in a recent issue of the *Illinois State Medical Journal.*

Some of Dr. Reed's observations are printed here because group hospitalization is one outgrowth of the insurance scheme for providing for life's uncertainties that is of extreme importance to physicians.

"Zealous advocates of the idea have created and spread the erroneous impression that medical men are opposed to all plans for Group Hospitalization," says Dr. Reed. "The truth is that no serious objections have been made by physicians to properly organized groups which have such medical representation in the management as to assure the expulsion of features hostile to the welfare of the people and to the proper practice of medicine. Indeed, the groups which have achieved the most success are those that have this coöperation . . .

Chicago Report

"In order to meet intelligently the exigencies of the local situation a committee was appointed by the Chicago Medical Society last spring to study the question. In June a report was presented to the Council which embodied certain principles which the Committee felt might preserve the ethics of practice and the independence of the doctor under the conditions imposed by the experiment.

"These principles were fundamental in character and required the proponents of Group Hospitalization so to organize as to—

1. Preclude the possibility of hospitals practicing medicine and from exploiting the services of physicians.
2. Prevent the underbidding of hospitals.
3. Recognize the A. M. A. and A. C. S. standards as the basis for hospital membership with such modifications as the Chicago Medical Society (or the county society) may from time to time officially approve.
4. Exclude no hospital except for reasons set forth in clause three.
5. Refer all matters of medical administration and medical policy to the Chicago Medical Society (or county society), whose decision in such cases shall be final and binding both on the Group Hospital management and on the member hospitals.
6. Keep such records of admission and assignment of patients as the medical society of the county may require and to keep them open for inspection by properly appointed officials of that body.

"The Committee believes that these principles should control the relationship between the medical profession and the Hospital Groups.

"Furthermore, in every instance where the plan is legitimately organized on a 'not for profit,' and therefore presumably on a wholly altruistic basis, reasonable protection should be assured against diversion of funds to sales agencies, publicity men, or profit seeking corporations. The enterprise should concern itself solely with hospital care to avoid entanglement in contract practice. Logically also, the control should be vested in the people who can render the service, that is, the doctors and the hospitals.

"With single hospitals, or small communities, the project may succeed but if wider and more ambitious expansion is undertaken the plan should embrace all approved hospitals, and their staffs should be open to all approved medical men, for otherwise a rift would be created and the hospital field opened to competition by rival groups, bidding and underbidding for 'acquisitions' or in membership drives which ultimately would bring ruin to the hospitals as well as the competing groups.

"The situation is problematical, the experiment unproven as yet and, in spite of the principles laid down, some cases admit so great a possibility of commercial domination that not only the plan but details of its operation should be most carefully studied before receiving a professional endorsement.

"In fact, medical men should refuse official recognition of such insufficiently tested schemes, until all the principles laid down have been complied with and the county society has so authoritative a voice in the management that it may watch sedulously the development and tendencies of the protean forms which this movement may assume."

What Dr. Leland Says

Dr. R. G. Leland, director of the Bureau of Medical Economics, American Medical Association, has also made an interesting study of hospital insurance.

"The importance of the movement," says Dr. Leland, "has been sensationally overstated. Out of 144 organizations which were, at one time or another, in the course of formation, only twenty-three exist today."

According to Dr. Leland, unmethodical management is commonly present and no adequate records are kept on which actuarial conclusions can be based. Attempts at financial statement are characteristically feeble and unbusinesslike.

Where they do not fail and disappear, the trend of these enterprises is, inevitably, toward the setting up of a surreptitious insurance business which makes for commercial expansion, competition, increase of commercial influence, merger with legitimate insurance concerns or finally become nuclei for expansion into health insurance or state medicine.

"The nature of the contract, therefore, and the type of administrative control are extremely important to the medical profession," according to the Leland report. "Medical men should vigorously oppose any proposition which destroys the basic features of medical service or permits hospitals, even by indirection, to enter the practice of medicine."

Preaching or Practicing

(Monthly Editorial by the Medico-Legal Advisory Committee)

William Corbin writes recently in *The American Magazine* using the title, "What We Pay for the Crash Racket," from which we quote for your consideration:

"Recently when I moved to New York I found to my amazement that it cost nearly $300 a year in premiums to get liability, property damage, collision, and fire and theft insurance on my new $600 car. I growled loudly to friends and neighbors and found plenty of sympathizers. But nobody could explain why rates were so high. Some blamed the Government, some the insurance companies. Some both."

And his conclusions:

"For the present, there is no hope for a general reduction in rates. Rather, there may be an increase. Two-thirds of every premium dollar I pay for public liability insurance is paid back in claims to the motorists. The only way our automobile insurance rates can be reduced is through preaching and practicing safety, and aiding the agencies which devote themselves to the exposure of fraud."

Mr. Corbin strikes a corresponding chord in our own situation.

Analyze The Cause

Your Medico-Legal Committee can continue to preach about the situation in our state, the members can continue to blame the insurance companies for raising rates for liability insurance, but

unless each one of us gives due consideration to the thoughtful analysis of the reason for this disturbing element in medical practice and the exercise of careful, safe driving through the pitfalls of medical work, just so long will this nefarious racket of the malpractice case operate to the detriment of the medical profession and their clientele.

We can save money from premiums by consideration of and careful suggestions to each other. Many a cautious word spoken by a guarded tongue has stilled a potential lawsuit and preserved an able reputation. Constructive criticism should always be welcomed, not condemned.

Certainly he belittles himself who heedlessly censures others and thus unthinkingly raises his own costs as well as the insurance rates for all.

Medical Economics Committee

PROBLEMS of several committees were discussed informally by members of the Medical Economics Committee, meeting recently in St. Paul.

Prominent among them were several questions referred to Organized Medicine by the State Board of Health through Dr. T. H. Sweetser, chairman of the State Health Relations Committee.

What shall be done with the Venereal Disease Camp now in operation at Savage, Minnesota? Federal funds are no longer available to support the camp.

Camp For Transients

It has been proposed that the State Board of Health set aside funds out of its appropriations to maintain the camp for transients and homeless men as a measure of protection for the community.

The Board, after an investigation, appropriated a small sum to maintain the camp for a three months' period, during which time definite decision will be made as to the usefulness of the camp.

Members of the committee and guests from other committees went on record as favoring, emphatically, the utilization of agencies and facilities already functioning for the general population for treatment and isolation of these transient men. Only a very small proportion of the men now at the camp were found to be infective and the money required to maintain them in camp was regarded as exorbitant for the triflling protection afforded, especially since it is impossible to keep men strictly quarantined in the camps.

Pneumonia Control

The problem of pneumonia control—also of great interest to Surgeon General Parran—is now under discussion by the Board. An appropriation of $10,000 for pneumonia sera is under contemplation. The Board would do the typing for indigent cases of pneumonia and would provide serum. It would coöperate with any medical societies that cared to work with it to spread use of these sera for the types of lobar pneumonia for which it is regarded as effective and also to test the efficacy of rapid typing.

The suggestion was made that groups of physicians in different parts of the state might undertake to assist the Board in a campaign to increase the use of serum treatment for pneumonia. The committee went on record as recommending that the entire matter be turned over to the Committee on Public Health Education for further study and recommendations to the Council.

For More Immunization

Dr. L. R. Critchfield, chairman of the Committee on Public Health Education, offered speakers and other assistance to any county medical societies who may wish to promote a campaign for diphtheria immunization in their communities or vaccination for smallpox. It was pointed out, again, that immunizaton materials and vaccine are now available from the State Board of Health for such projects and that a special effort to immunize children is essential, not only to the public welfare, but to avoidance of unnecessary hiring of physicians to provide preventive care for school children.

The plan for physical examinations of all members now being perfected by officials of the American Legion was discussed. Unofficial information as to the scope of the examination asked for and as to the fees set elsewhere in the United States roused some question in the minds of the committeemen present. It was suggested that the tentative plans of the Legion be brought to the attention of county secretaries immediately so that they may be in a position to object in many Legion posts if plans calls for extensive laboratory examinations and a fee too small to cover costs for an adequate investigation.

A detailed explanation of what is required for

a complete physical examination and what should be a fair fee for such service is to be given, at the direction of the Council at a recent meeting, to Legion officials who are now drawing up the plan.

Joint Finance and Collection Agencies Opposed

Several important policies were recently established for Wisconsin physicians by the House of Delegates of the Wisconsin State Medical Society.

One, relating to participation of physicians in joint finance collection schemes, was subjected to considerable discussion. It was formally adopted, however, with but three dissenting votes.

As a result, any member of the Wisconsin State Medical Society who participates in any scheme in which the business of adjusting accounts and making loans is combined with the business of collections shall be declared to be guilty of unethical and unprofessional conduct and such conduct is declared to be good and sufficient cause for revocation of membership in the society.

Loss to Doctors, Patients

The Banking Commissioner of Wisconsin pointed out the impropriety of combining collections with finance and loan companies. His opinion was cited in the resolution passed by the physicians with the additional note that if physicians generally, or any of them, participate in such schemes the inevitable result will be loss of public respect, loss of the physician-patient mutual relationship, a commercializing of the profession, in that the physician becomes party to a contract in which his patients are induced to use high interest rate procedures to finance cost of medical care, and an increase in costs to the patient.

Society Must Approve

Another significant resolution demands that all members who contemplate participation in plans for medical service which do not provide for unrestricted free selection of physician by the patient, himself, shall submit the terms to their component county medical societies before entering into them. If the county medical society disapproves of the plan then the member must decline to participate in it or show cause why he should not be dropped from membership.

The delegates also approved the appointment of a special committee on the subject of credits and collections with representation thereon from each councilor district; adopted a resolution urging legislation requiring that applicants for license to practice medicine be either citizens of the United States or that they be licensed to practice in the countries in which they completed their medical education; reaffirmed its position that questions on hospital practice as they relate to pathology and radiology be handled through the grievance committee of the component county medical society; endorsed legislation looking toward examination of applicants for driver's license.

Minnesota State Board of Medical Examiners

Two Quacks Plead Guilty at New Ulm, Minnesota

Re: State of Minnesota vs. Peter Heppner
Re: State of Minnesota vs. Rudolph H. Bock

On November 3, 1936, Peter Heppner, fifty-two years of age, who lives on a farm near Butterfield, Minnesota, and Rudolph H. Bock, thirty-three years of age, who lives at Essig, Minnesota, entered pleas of guilty at New Ulm, to an information charging them with practicing healing without a basic science certificate. Heppner, who has a previous conviction (October 15, 1936) at Fairmont, Minnesota for a similar offense, was sentenced by the Honorable A. B. Gislason, Judge of the District Court, to a term of twelve months in the Brown County Jail. Judge Gislason told Heppner that he had to serve three months of this sentence, at the end of which time he would be released, and the balance of nine months would be suspended upon the condition that he absolutely refrain from practicing healing in any way, shape or manner in the state of Minnesota. Bock was given a sentence of three months in the Brown County Jail, but this sentence was suspended by Judge Gislason due to the fact that it was Bock's first offense, and because of his stating to the Court that he was through entirely with this type of thing. Bock was further required by the Court to likewise refrain from practicing healing in any manner in the State of Minnesota. Heppner was ordered to report to the Court on the opening day of the May, 1937, term after he has served his jail sentence, and Bock was ordered to report to the Court at the opening day of the November, 1937, term of Court. Bock was also required to pay the court costs of $14.50.

Heppner, prior to October, 1935, had represented himself in southwestern Minnesota as a nerve and bone setter. Following his appearance in court at Fairmont in October, 1935, before Judge Haycraft, he worked on a farm until June, 1936. At that time

he treated a number of individuals in the vicinity of Winthrop, Minnesota. In the latter part of October, 1936, he teamed up with Bock for the purpose of examining patients who had purchased tablets sold by Bock. Bock told the court that these tablets were purchased from the Munsell's Mineral Products Company, Nebraska, and that they were being sold at the rate of $7.50 per 1,300 tablets. They were represented as a cure-all for any number of ailments from colds and sinus trouble to pulmonary tuberculosis. A number of individuals had purchased as much as sixty to seventy dollars worth of these tablets. Bock told the court that his profit was $2.50 per 1,300 tablets. The facts indicate that some patients had bought between ten and twelve thousand tablets and were still taking them.

This tie-up between Heppner and Bock was stopped at the outset through the prompt and efficient work of Eugene Clark, Chief of Police at Sleepy Eye, Minnesota, and Sheriff John Reitter of Brown County. The Medical Board also wishes to acknowledge the fine co-operation received from Mr. T. O. Streissguth, county attorney at New Ulm.

Minnesota Physicians Lose Licenses

In the Matter of the Revocation of the License of Val Do Turner, M.D.

At the regular meeting of the Minnesota State Board of Medical Examiners held on November 7, 1936, the license to practice medicine held by Dr. Val Do Turner, St. Paul Negro physician, was revoked, cancelled and set aside. Dr. Turner was arrested on August 7, 1936, following the issuance of a complaint charging him and one George R. Viger with the crime of manslaughter in the first degree. The complaint was filed following the death of a twenty-seven-year-old St. Paul woman at Ancker Hospital on July 15, 1936, after the performance of a criminal abortion upon her by the defendant Viger. Viger is serving four years in the State Prison at Stillwater for his part in this crime. The investigation disclosed that the woman went to the office of Dr. Turner and was referred by Dr. Turner to the defendant Viger.

Dr. Turner was previously before the Medical Board on July 8, 1936, in connection with the performance of a criminal abortion on another woman, and was given another chance to make good by the Board. On September 23, 1936, following the surrender by Dr. Turner of his medical license and his basic science certificate, the manslaughter charge against him was filed away. Dr. Turner, who is seventy years of age, is leaving to reside with his sisters, one of whom lives in Detroit, Michigan, and the other one in Nashville, Tennessee.

In the Matter of the Revocation of the License of Frederic H. Moss, M.D.

On November 7, 1936, the Minnesota State Board of Medical Examiners revoked the license to practice medicine formerly held by Dr. Frederic H. Moss. Dr. Moss' license was revoked because of his habitual indulgence in the use of narcotics. Dr. Moss is thirty-nine years of age and a graduate of the University of Minnesota in 1927. Dr. Moss formerly practiced in Minneapolis, Zumbrota, Grand Rapids, and a number of other Minnesota towns, the last one being New Richland. The records of the Medical Board show that Dr. Moss has used morphine at various times over a period of approximately eight years. Dr. Moss was first cited to appear before the Board in February, 1935.

In the Matter of the Revocation of the License of William M. Chowning, M.D.

William M. Chowning, sixty-three years of age, and licensed to practice medicine in the state of Minnesota on April 12, 1901, had his license revoked by the Minnesota State Board of Medical Examiners on November 7, 1936. Dr. Chowning, who has practiced in Minneapolis for many years, was convicted in the District Court of Hennepin County on April 24, 1936, of the crime of abortion. The grand jury of Hennepin County indicted Dr. Chowning on October 30, 1934, along with another defendant, one Val Ramer, a woman who holds no license to practice anv form of healing in the state of Minnesota. Following Dr. Chowning's conviction he was sentenced by Judge E. A. Montgomery to a term of not to exceed four years in the State Prison at Stillwater. The sentence, however, was suspended by the court.

Indian Quack Pleads Guilty at Mankato

Re: State of Minnesota vs. Henry Jeffrey, alias "Doctor" Jeffrey

On November 24, 1936, Henry Jeffrey, alias "Doctor" Jeffrey, who claims to be seventy-seven years of age, and who resides at Armstrong, Iowa, entered pleas of guilty to two complaints charging him with practicing healing without a basic science certificate, before the Honorable L. H. Morse, Judge of the Municipal Court at Mankato, Minnesota. Judge Morse fined Jeffrey $100.00 or forty-five days in the Blue Earth County jail on the first complaint, and upon payment of the fine Jeffrey was given a suspended sentence of ninety days in the Blue Earth County jail on the second complaint.

Jeffrey is to absolutely refrain from practicing healing in the State of Minnesota, and is to remain out of the State for a period of one year.

Jeffrey, who represented himself in Mankato as "Doctor" Jeffrey, and who claims to be one-half Cherokee Indian, has been making frequent trips to Mankato during the past six months. In September he undertook to treat a Mankato woman who was suffering from tuberculosis. Jeffrey diagnosed her case as "asthma" and prescribed several kinds of roots and herbs. For this he was paid the sum of $15.00. Jeffrey's first call to this patient was September 14. He made a second call on September 28, and the patient died on October 11. Jeffrey was also treating a second woman at Mankato for what he described as a blood condition. At the time of his arrest Jeffrey had the back of his automobile filled with boxes and packages of roots and herbs, empty bottles, pill and salve boxes, with duplicate sheets containing directions for the various preparations. Jeffrey's customary charge was $15.00 at the time of his first call and $10.00 per month thereafter.

The State Board of Medical Examiners received very splendid coöperation in the handling of this case from Mr. C. A. Johnson, County Attorney of Blue Earth County; Mr. F. W. Cords, Sheriff; and Mr. Ben Williams, Deputy Sheriff. Because of the fact that Armstrong, Iowa, is just ten miles below the Minnesota state line, the Medical Board respectfully requests that it be immediately informed if Jeffrey attempts again to operate in the State of Minnesota.

South Dakota Woman Pleads Guilty at Worthington

Re: State of Minnesota vs. Hilda Andrews

Hilda Andrews, thirty years of age, entered a plea of guilty on December 19, 1936, to an information charging her with practicing healing without a basic science certificate. Following a statement of the facts to the Court, the defendant was sentenced by the Honorable Charles

A. Flinn, Judge of the District Court, at Worthington, to a term of sixty days in the Nobles County jail. Upon being informed that the defendant had closed her place of business on the day of her arrest in November and had returned to her home in South Dakota, Judge Flinn suspended the sentence and placed the defendant on probation, conditioned that she refrain from practicing healing in any manner in the State of Minnesota unless properly licensed. Judge Flinn also criticized the defendant for her failure to make proper inquiry as to the laws of this state before she opened her place of business at Worthington. It developed that Miss Andrews had taught school for the past eight years and had a B.A. degree. Judge Flinn told her that that was all the more reason why she should have made inquiry. The Court also pointed out that the Medical Laws in this state are enacted for the benefit of the people and to protect them from being imposed upon by quacks.

Miss Andrews advertised herself to the public as using the Brooking Methods of Ectylotic Ablution, and also offered to give Oil Vapor Treatments and Swedish Massage. The treatments were advertised as a relief for rheumatism, neuritis, arthritis, lumbago, hay fever, eczema, nervousness, fatigue and many other human ailments. The charge was $2.00 per treatment. Miss Andrews stated that she bought her equipment from a so-called Dr. Brooking at Sioux City, Iowa. She stated that she was to pay $300.00 for a cabinet bath plus $5.00 per gallon for the oil that was used in the Oil Vapor Treatments. She stated that she had paid approximately $200.00 on her equipment and still owed about $100.00. She also stated that she had been informed by Brooking that it was lawful for her to operate in the State of Minnesota. However, when she notified Brooking by long distance telephone that she was under arrest at Worthington, he stated that he would be unable to help her.

The State Board of Medical Examiners wishes to acknowledge the very fine coöperation that was received from Mr. Arnold W. Brecht, County Attorney of Nobles County. This case was one of the first matters to come before Judge Flinn, who was recently appointed to the Bench following the death of Judge Gurley, and we believe that the Court's criticism of the defendant for failure to make sufficient inquiry as to the laws of this State before starting in business, was right to the point. There is not much excuse for a person to engage in the unlawful practice of healing when a little inquiry would make it possible for the defendant, or anyone else, to ascertain the law in reference thereto. We also believe that the Court's observation that these laws are passed for the benefit and protection of the people, is a very timely one.

Hopkins Woman Pleads Guilty to Manslaughter

Re: State of Minnesota vs. Ethel Planque, also known as Ethel Benson.

On Monday, December 21, 1936, Ethel Planque, also known as Ethel Benson, fifty-two years of age, was sentenced by the Honorable Frank E. Reed, Judge of the District Court of Hennepin County, to a term of one to fifteen years in the State Reformatory for Women at Shakopee, Minnesota. Mrs. Planque was indicted by the grand jury of Hennepin County on December 9, 1936, charged with manslaughter in the first degree, and on December 19, 1936, she was permitted to plead guilty to manslaughter in the second degree.

The indictment against Mrs. Planque was returned following the death of a nineteen year old Northeast Minneapolis girl who was aborted by the defendant in the home of the defendant at Hopkins, Minnesota, on December 4, 1936. The operation was so crudely performed that it resulted in a perforation of the uterus and the death of the patient on December 8, 1936, at the Minneapolis General Hospital. Mrs. Planque was to have been paid the sum of $35.00 for the abortion, but actually received $17.00 in cash. She admitted that she had no medical training of any kind, nor had she ever received any training as a nurse. Despite this lack of knowledge she admitted that she had performed a number of abortions.

The prompt handling of this case by everyone concerned is to be highly commended. It has been a rather difficult problem in the past to dispose promptly of similar cases, and the delay naturally greatly enhances the chances of the defendant to avoid punishment. The sentence imposed by Judge Reed should also tend to discourage this type of work.

Kellogg's All Bran Omitted from The List of Accepted Foods

Submitted advertising for Kellogg's All Bran (J.A.M.A., Feb. 9, 1935, p. 474) has repeatedly been found to be in conflict with the spirit and intent of the General Decisions on Food and Food Advertising of the Council on Foods. The total effect of the firm's advertising is to impress the reader that Kellogg's All Bran is the answer to substantially all constipation difficulties. The reference to symptoms that may accompany constipation, together with the implication that Kellogg's All Bran will correct these conditions, is contrary to the Rules of the Council. The Council voted, in view of the continued objectionable advertising for products of the Kellogg Company and the claims made, that acceptance of the products of this company be withdrawn and that the products be reconsidered without prejudice if presented not earlier than one year from date of notification, to determine whether or not the policy of the firm has changed sufficiently to warrant reacceptance of the products at that time. The Council has recently summarized the available evidence regarding the significance of bran in the diet. Bran is a product which is capable of contributing to the nutritive requirements in a number of respects, notably as a source of roughage. There are individuals, however, who cannot tolerate bran. The Council believes advertising which conceals the potential danger of the indiscriminate use of bran is contrary to the best interests of the public. The Council therefore has reaffirmed its stand and authorized publication of its report. (J.A.M.A., Oct. 17, 1936, p. 1303.)

OF GENERAL INTEREST

Dr. C. A. Williams of Pipestone was recently appointed physician at the Pipestone Indian School.

* * *

Dr. Merchislaw M. Sarnecki of Saint Paul was united in marriage, September 6, to Miss Margaret Fahnestock of Lincoln, Nebraska.

* * *

Dr. H. E. Koop of Cold Spring, Minnesota, lost all his office equipment in a fire which swept through the main street of the town, December 14.

* * *

Dr. Ralph Knight, of Minneapolis, is devoting a year to the study of anesthesia at the Mayo Clinic. He expects to return to Minneapolis next July.

* * *

Dr. Thomas J. Kinsella announces the opening of offices at 1251 Medical Arts Building, Minneapolis. His practice will be limited to thoracic and abdominal surgery and tuberculosis.

* * *

Dr. William T. Peyton, associate professor at the University of Minnesota, was elected to membership in the Western Surgical Association at the annual meeting of the Association held at Kansas City in December.

* * *

Dr. Adolph M. Hanson of Faribault has become an associate in research of the Philadelphia Institute of Medical Research. Dr. Hanson will continue to carry on his research activities in his own laboratory in Faribault.

* * *

Dr. Morris H. Nathanson, formerly of Minneapolis, has announced the opening of an office for the practice of internal medicine, at 323 Westlake Professional Building, 2007 Wilshire Boulevard, Los Angeles, California.

* * *

Dr. Ruth E. Boynton, assistant to Dr. Harold Diehl before he became dean of medical sciences at the University of Minnesota, has been promoted to take Dr. Diehl's fomer place as director of the University of Minnesota Student Health Service.

* * *

Dr. L. C. Combacker of Fergus Falls was elected president of the Park Region Medical Society at the annual meeting in December. Other officers are Dr. C. J. T. Lund, Underwood, vice president; Dr. Norman Baker, Fergus Falls, secretary, and Dr. T. S. Paulson, Fergus Falls, treasurer.

* * *

Dr. H. B. Dornblaser will take office as president of the staff at Asbury Hospital, Minneapolis, January 1, succeeding Dr. R. C. Webb, who was named to the board of directors. Other new staff officers are Dr. E. A. Loomis, vice president; Dr. W. H. Ford, secretary-treasurer; Dr. T. A. Peppard was named a director. Holdover directors are Dr. H. F. Wiese, Dr. B. A. Gingold and Dr. Lawrence Boies.

* * *

Dr. Joseph B. Gaida was recently married to Miss Naomi Mary Ann Aubin, daughter of Dr. and Mrs. Alexander Aubin, of Minneapolis, Minnesota. The bride, who was a high school teacher, is a graduate of the College of Education at the University of Minnesota. Dr. and Mrs. Gaida are at home in St. Cloud, where Dr. Gaida is an associate of Drs. J. J. Gelz, and W. T. Wenner, in the practice of eye, ear, nose and throat.

* * *

One of the most satisfying experiences one can possibly have must be the tribute paid by many friends on the rounding out of half a century of professional service to a community. Such was the experience on December 15, last, when some 200 admiring friends sat down to a banquet at Springfield, Minnesota, in honor of Dr. J. C. Rothenburg of that city, who has practiced medicine there for fifty years. The banquet tendered by the Springfield Booster Club and served by the Legion Auxiliary, was participated in by men and women of the community. Mr. A. G. Erickson, presiding as toastmaster, introduced the speakers, among whom were the Hon. Frank Clague of Redwood Falls, former congressman and judge, who was principal of Springfield's two-room school when Dr. Rothenburg arrived there October 1, 1887.

Mrs. A. C. Lehrer spoke for the women of the community and paid tribute to the doctor's sterling qualities and cheerful disposition. Dr. W. G. Nuessle spoke "As One Doctor to Another," praising the fine professional ethics which had always guided Dr. Rothenburg in his work. Following an address on the advances in modern medicine, by Dr. George B. Weiser of New Ulm, who was recently similarly honored, Mrs. Rothenburg came in for a share in the tribute when she responded to the toast "The Doctor's Wife" proposed by Mrs. Emma Mueller, a friend of Mrs. Rothenburg from childhood. Another interesting address was that given by Mr. Fred W. Johnson, president and founder of the Brown County Historical Association, who recited interesting data about the early Brown County physicians. Much community singing added to everyone's enjoyment of the gala occasion.

In Memoriam

John E. Campbell

1875-1936

DR. JOHN E. CAMPBELL was the son of the late Norman and Magdeline Campbell. He was born in Saint Paul on April 3, 1875. While he was still a small child the family moved to Minneapolis, where they lived until he had completed his education at the University of Minnesota, in 1901. The family home was on Clinton Avenue in Minneapolis. Besides Dr. Campbell the family consisted of one daughter, Miss Lulu Campbell, who died July 14, 1908, and another son, Theodore Campbell.

Dr. Campbell was graduated from a Minneapolis high school and then entered the University of Minnesota, from the medical college of which he was graduated in 1901 with degrees of Bachelor of Science, Master of Science, and Doctor of Medicine. He served one year as an interne in the Minneapolis General Hospital and in January of 1902 he came to South Saint Paul to practice, where he continued to practice until his death. He was married on September 18, 1903, to Miss Mary Jane Forsythe. Two daughters were born to them, Miss Mildred Campbell and Mrs. Frederick C. Grant of Saint Paul. He was very active in public and political affairs, having been Republican chairman for many years in Dakota County. In 1928 he was one of the Republican electors in the national election. Dr. Campbell traveled a great deal. During the summer of 1934 he traveled around the world, and every summer he visited countries in different parts of the world, always attending medical clinics in the great medical centers.

Next to the practice of medicine, Dr. Campbell lived for Minnesota football. The University lost its most ardent and sincere football fan in the death of Dr. Campbell. In his college days at Minnesota he became Minnesota's first cheer leader, and since that time had continued leading his own group's cheers. Since leaving school he had missed no home games and only one game away from home. Only three days before his tragic death he was actively leading the cheers of the "Hook 'Em Cow" football fans from South Saint Paul at Madison, Wisconsin, the group that he headed for all the thirty-five years he had been in South Saint Paul. It was through Dr. Campbell's efforts that this group became such staunch supporters of the Minnesota teams and traveled in a body to all the games. He always carried his famous megaphone and cane with Minnesota's colors on them, which he had had since he was in school.

There are many old time families in and around South Saint Paul and Dakota County that Dr. Campbell has taken care of, medically, for years. These people will sorely miss their loyal servant, who was always willing to give them medical aid at any hour of the day or night. He was coming from one of these country calls on November 24, a very stormy night, when his car was swerved by the strong wind, skidded over the bank and caused the doctor's death.

He was a Scottish Rite Shriner and a member of Mizpah Lodge, No. 191, of the Masonic Order. He also held a membership in the Dakota County Medical Society, Ramsey County Medical Society, Minnesota State Medical Association, and the Military Surgeons. Dr. Campbell was school physician for many years and served as city and county physician for many terms in South Saint Paul.

John B. Darling

1859-1936

DR. JOHN B. DARLING, for more than fifty years a practicing physician in Saint Paul, died at his Summer home at Danbury, Wisconsin, November 10, 1936, at the age of seventy-seven.

Born at Fond du Lac, Wisconsin, he obtained his medical degree at Rush Medical College and studied for a time in Vienna.

Dr. Darling began practice in St. Paul in 1885—a period he used to refer as "the horse and buggy days, when we asked $1.50 for a call and sometimes got it."

In 1898 Dr. Darling served at Fort Snelling as a contract surgeon where most of his practice was caring for typhoid patients among the troops, he having had as many as 203 typhoid cases at one time. He was always proud of the fact that he lost but three patients at that time from typhoid.

The same year he accompanied the troops to Leech Lake to put down the Chippewa uprising under Chief Bagwunagijik and attended the succeeding peace conference.

A little later Dr. Darling went to the Philippines with the Third United States Infantry, returning to St. Paul, where he continued his practice. His records during the fifty years of practice in Saint Paul included 1,967 obstetric cases. No patient was so poor but what he received needed attention at his hands.

Dr. Darling is survived by his widow, a daughter, Mrs. Gordon L. Fulmer, and a son, John B. Darling, Jr., all of St. Paul.

P. M. Fischer

1879-1936

DR. P. M. FISCHER of Shakopee, Minnesota, died September 29, 1936, of coronary disease, at the age of fifty-six.

Dr. Fischer was born on December 20, 1879, at Formosa, Ontario. He received his bachelor's degree from St. Jerome's College and his medical degree from Detroit College of Medicine in 1907. He took his internship at Harper Hospital, Detroit, Michigan, following his graduation.

Dr. Fischer spent his entire professional life in Shakopee, where he practiced and operated the Shakopee Hospital for many years. He was a charter member of the Scott-Carver County Medical Society and a

member of the Minnesota State and American Medical Associations. He acted as county physician for several years. A Catholic by faith, he was an active member of the Knights of Columbus.

Dr. Fischer spent his last days in the construction of a new home. He is survived by his widow; a son, Leander; two daughters, Kathryn and Georgia Rose, and a brother, Dr. H. P. Fischer, all of Shakopee, and three sisters.

Willard Parker Greene

1871-1936

DR. WILLARD P. GREENE, Minneapolis, for many years senior epidemiologist with the Division of Preventable Diseases of the Minnesota Department of Health, died November 29, 1936, the day following a fall. He was starting on a field trip and had two large packages and a brief case in his hands as he left his office. He tripped at the top of the stairs and fell to the bottom, sustaining a skull fracture.

Dr. Greene was born October 7, 1871, at Hemlock, New York, the son of Dr. Jay Levins Greene, who was at the Bellevue Hospital, New York, during the Civil War. The father took up country practice in Hemlock and named his son after his favorite professor, Dr. Willard Parker. The father died when his son was but thirteen years old but the association between father and son up to that time stimulated the son to study medicine.

After attending the public schools at Hemlock, Dr. Greene attended preparatory school at the New York Seminary in Lima, New York, and graduated from the Genesee State Normal School in 1895. For the next five years he taught in grade schools at Caneadea, N. Y., and Flowersville, N. Y., and prepared special students for college. He graduated from the University of Michigan Medical School at Ann Arbor in 1904.

From 1904 until 1911 Dr. Greene practiced at Washington, D. C., and then joined the Indian Service at White Earth, Minnesota, where he practiced from 1911 to 1913. He became affiliated with the Minnesota State Board of Health, June 1, 1913, and served continuously with the Board except for the period from December 1, 1921, to April 26, 1926, when he was with the Veterans Bureau. The efficient way in which he reported on a typhoid epidemic on the White Earth Reservation when he was chief surgeon for the Indian Office led to his joining the State Board of Health.

Dr. A. J. Chesley, Executive Officer of the State Board of Health, pays the following tribute to Dr. Greene:

"He was about the best diagnostician on polio, meningitis, encephalitis I ever knew, as he saw nearly all the cases and suspects in Minnesota through all these years of service as Senior Epidemiologist. He never spared himself. Sleep, meals, fatigue, tough cases never cut in on his schedule to get work done. He was always a gentleman, courteous, kind and considerate, yet immovable in a matter of right and wrong. Never hurried, never excited, he was never too tired to start out at unholy hours for long hard trips regardless of roads and weather. In the pre-auto days he many times was out two to three weeks at a stretch, getting whatever sleep he could in a livery rig between stops. He never asked a day off, and went without vacation year after year, filling in for others when they were sick or had sickness in their families.

"As a friend, Willard P. Greene was true and dependable. The Chippewas held him in such esteem that a number of times delegations have come from the North to Minneapolis and sometimes waited two or three days for him to return from some epidemiological trip to ask his advice on personal or tribal matters. What an Indian would not do for him, the most intelligent and well trained loyal collie dog would not do for his master. It was uncanny the way he got people to do right when others who tried failed completely. Behind his soft, slow speech always politely put, he had a will that never weakened and the toughest fellows one ever meets in field work never got the best of Dr. Greene. You realize what his death means to the old-timers on the staff who have worked with him since June 1, 1913."

Dr. Greene is survived by his widow, Harriet Cranston Greene, a daughter, Lois, and a sister, Mrs. David J. Gibson of Rochester, N. Y.

Giles R. Pease

1857-1936

Word has been received of the death of Dr. Giles R. Pease at Los Angeles, California, on May 28, 1936. Dr. Pease practiced medicine for forty years in Redwood Falls, and moved to Los Angeles upon his retirement, seventeen years ago. He was seventy-eight years of age at the time of his death.

Gadoment Not Acceptable for N. N. R.

The Council on Pharmacy and Chemistry reports that Gadoment is the coined, proprietary name under which E. L. Patch & Co. markets a preparation stated to contain "70 per cent Cod Liver Oil in a wax base with Zinc Oxide Benzoin and Phenol." According to a trade package it is proposed for use in the treatment of burns, cuts and minor skin irritations. Early in 1935, E. L. Patch & Co. inquired of the Council's Secretary what would be the attitude of the Council on the use of the trade-marked name "Gadoment." After some further correspondence with the firm the Council held that the firm's right to the use of a proprietary name for this product was not established. From its consideration of the evidence from the literature, the Council concluded that the whole subject of cod liver oil treatment of burns and wounds is still in an experimental stage. E. L. Patch & Co. has in the case of Gadoment gone precisely contrary to the accepted way of introducing a new preparation. Instead of collecting evidence for claims and then presenting this to the Council, the firm went ahead promoting the product with the unconfirmed claims. The Council declared Gadoment unacceptable for New and Nonofficial Remedies because it is an unoriginal product of insufficiently declared composition marketed under a coined proprietary name with unwarranted therapeutic claims, and indirectly advertised to the public. (J.A.M.A., Oct. 24, 1936, p. 1384.)

MINNESOTA STATE MEDICAL ASSOCIATION

House of Delegates—Special Session

November 1, 1936

THE HOUSE of Delegates of the Minnesota State Medical Association met in special session at the Saint Paul Hotel, Sunday, November 1, formulated certain important general principles held by the medical profession of Minnesota to be essential to the delivery of good medical care.

The immediate objective: an official and definite recommendation embodying these principles for presentation, at the latter's request, to the Interim Committee of the Legislature. The Interim Committee is now engaged in the final effort to draw up workable legislation coördinating welfare work in Minnesota for submission to the 1937 session of the Legislature.

The special session, prefaced by a Council meeting, convened at the Saint Paul Hotel at 10:30 a.m. Sunday.

Dr. O. E. Locken, Crookston, elected speaker of last May's House of Delegates meeting at Rochester, was retained by consent of the delegates to preside over the special session. Thirty-two delegates were present together with officers, committee chairmen, other interested members, also Dean H. S. Diehl of the University of Minnesota Medical School and representatives of the dental and pharmaceutical associations. Among the latter were Dr. L. M. Cruttenden, St. Paul, secretary of the Dental Association, Dr. D. W. Wilson, Belle Plaine, chairman of the Dental Association's legislative committee and president-elect, and Dr. V. D. Irwin, Dental Association member, and Mr. W. C. Kregel, St. Paul, chairman of the legislative committee of the State Pharmaceutical Association and Mr. A. Roy Johnson, secretary, State Pharmaceutical Association.

A reference committee consisting of Dr. J. L. McLeod of Grand Rapids, chairman; Dr. L. L. Sogge, Windom; Dr. C. M. Johnson, Dawson; Dr. W. A. Coventry, Duluth; Dr. M. C. Piper, Rochester, and ex-officio members: Dr. T. H. Sweetser, Minneapolis, and Mr. F. Manley Brist, St. Paul, was appointed by the Speaker. The reference committee was instructed to meet at noon and draw up proposals based upon the discussion for final action by the delegates.

The morning was devoted to discussion of a series of pertinent questions put to the delegates in advance of the meeting by Dr. Sogge.

The questions, briefly, covered the right of relief recipients to select their own physicians and hospitals, participation of physicians in the administration of relief, authorization for medical care to relief patients, and method of payment—direct or indirect—of the physician for his work.

They were intended by Dr. Sogge and his committee simply as a starting point for consideration of the entire problem and prompted some interesting discussions of which only highlights are given here.

DR. GEORGE EARL (newly elected successor to the late Dr. H. M. Workman as chairman of the Council): The matter of the advisability of a uniform state fee bill for relief work has been brought once more before the Council. It is the consensus of the Council, and, I believe, of others who have given the matter serious study during these last few years that a uniform fee bill drawn up by the state association is objectionable from many points of view and should not be considered.

DR. L. L. SOGGE: We feel that the problems before us today are so important and mean so much to the public welfare, as well as to the profession of medicine that we could not assume the responsibility, alone, for the recommendations to be made to the Interim Committee. That is why we have asked for this meeting and I am very much pleased to see so many present for this discussion.

The committee, after discussions in which Dr. J. L. McLeod, state senator and member of the Interim Committee participated, feels that recipients of relief should have the right to select their own physicians for themselves and members of their families; also that this right, once established, would in most cases solve the difficulty of choice of hospital, which should, however, be allowed in case of a question.

The superiority of the county system of handling relief in comparison with the township system was made a matter of record by the House of Delegates at its Rochester meeting in May. The Committee felt, therefore, that no further action on this matter need be taken up at this meeting.

The committee felt that the medical advisory committee in each county played a valuable part in the administration of medical relief and should be continued. The question of whether or not a physician should be a member of the county welfare board, in the event that such machinery is established, received no action.

It was also the opinion of the committee that payments for professional services should be made to the physician direct in all cases of direct relief. In case of work relief the committee made no recommendation looking toward statutory enactment. It was the opinion of the members that the situation might be handled satisfactorily and with much less difficulty by administrative rule or regulation.

The form of authorization for treatment used under SERA was recommended by the committee as practical and satisfactory. But some qualification of the law was thought advisable by the committee so that the basis for eligibility to relief may be based upon the individual needs of the patient concerned rather than upon some arbitrary ruling.

Now these suggestions from the Committee on Public Policy and Legislation should not be received as a pre-prepared plan that must be accepted by this meeting. We ask you for your best thought and opinion and all of us, naturally, will be guided by your decisions today.

DR. O. E. LOCKEN (Speaker): The Interim Com-

mittee, as I understand it, received $5,000 to make its investigation. It is obvious that so tremendous a field could not be thoroughly investigated with so small a fund. A special investigation is accordingly being made by a committee of the State Planning Board, also, which has an appropriation from the Federal government of $25,000 for the purpose. This study will be exhaustive. Its findings will be available to the Interim Committee though its official report is to be made to the governor. On the committee are two members of our organization, Dr. W. A. Coventry of Duluth and myself, appointed by members of the planning board for the purpose of giving Organized Medicine a proper representation in the planning of the study.

DR. W. A. COVENTRY: The committee has had only two meetings but I feel certain that something will come out of its investigations that will be worthwhile. As the only representatives on the committee of the professions of dentistry, pharmacy or hospital executives, we shall assume the responsibility of looking after interests of all the groups allied to medicine.

DR. LOCKEN: It is generally recognized that there will always be a large number of unemployed regardless of whether the times are good or bad. Changes in industry plus the lengthening span of life and the tendency of industry to turn men out after the age of 50 are responsible. An approximate expenditure of at least $60,000,000 a year is estimated as necessary to care for this large constant group. Our program of Social Security must inevitably be broadened to provide for these people as well as for other problems. Policies must be shaped to guide in drawing the line between those who can help themselves and those who will be wards of the state.

We are extremely fortunate in having several members of our association in the legislature, notably Dr. McLeod, who is a state senator and himself a member of the Interim Committee.

(For Dr. McLeod's talk see the December, 1936, issue, Medical Economics Section, pages 802-803.)

DR. B. J. BRANTON, Willmar: With Dr. McLeod on the Interim Committee, I am sure that we are going to be well represented.

We know we are living in a changing time, a time that is bringing new problems. But we also know that one thing should never be changed no matter what other adjustments the times may require: that is the one factor that has been fundamental since the beginning of medicine to good medical care—the confidential doctor-patient relationship.

DR. C. L. ROHOLT, Waverly: Two things especially should be thoroughly discussed and ironed out by the Committee and the Legislature.

One is this matter of emergencies. When an emergency is brought in the physician notifies the proper authorities. But the authorities, upon looking into the case, may decide that the patient was not technically a pauper and refuse payment and the physician is out altogether. It is as difficult to determine who is a pauper as to determine whether a man is drunk after three drinks.

Another thing is the question of hospitalizing patients in their home county hospitals. Ordinary cases can much better be hospitalized at home, I believe, with the county paying half and the state paying half, than by sending them to neighboring counties or to the University hospital.

MR. F. M. BRIST: The Department of Administration and Finance, commonly known as the "Big Three," Friday notified the State Board of Medical Examiners that no further vouchers issued by the Board would be honored. That leaves the Board at present in the position of not being able to pay out anything even for rent and overhead. Until Friday the State Board of Medical Examiners has always been self sustaining and has never been requested to prepare a legislative budget. The Big Three have now requested the Board to prepare a budget for submission to the Legislature. If such a budget is prepared the Big Three will have the power to alter, revise, lower or increase it, at will.

Since its creation, the Board has been financed chiefly by the registration fee of $2.00 paid by licensed physicians each year. This money, amounting to about $7,000, supplements the funds realized from the $20 examination fee. The total is insufficient for the work and the suggestion has been made that the Legislature be asked to increase the license fee. If, as a result of the action of the Big Three, the medical board is not to be able to spend the money without an appropriation, you should think twice, it seems to me, before asking that the fee be raised. The whole matter has been put up to the attorney general for a ruling and the solution will depend upon his decision.

DR. A. W. ADSON, Rochester (President-Elect and member of the State Board of Medical Examiners): If the Board is to continue its present active program, additional funds will have to be secured. Our future course depends now upon the attorney general. If his decision is favorable and if the Big Three accepts it, in all probability the Board will ask the Committee on Public Policy and Legislation to ask the Legislature for an increase in the registration fee. If the decision is unfavorable no increase will be asked because the license fee will then become virtually a special tax on the medical profession.

I can assure you, however, that the State Board of Medical Examiners fully appreciates the problems that confront all of us and will do nothing rash. Members will find some satisfactory method, I feel sure, to carry on the important program of eliminating quacks, also irregular practice among licensed physicians.

DR. E. A. MEYERDING, St. Paul (Secretary): The $3,000 appropriated in case it was needed by this House of Delegates to assist the Board was never called for. It has accordingly reverted back to our treasury and is not in our budget for that purpose at this time.

DR. THEODORE SWEETSER, Minneapolis (Chairman, Committee State Health Relations): I hope the reference committee will pay particular attention to the prevention of abuses. If there is anything that is going to break down a system such as we hope to propose, it is going to be abuses creeping in and the resentment that will be caused thereby. We ought to go

as far as possible to prevent this thing becoming a political machine.

DR. HORACE NEWHART, Minneapolis (Chairman, Committee on Deafness Prevention and Amelioration): I want to take this opportunityy to bring before the House of Delegates a new problem that has grown out of the development of instruments for the accurate measuring of hearing. Such instruments have recently been put on the market at much reduced cost and laymen calling themselves "audiometrists" are likely to be going into the business of testing hearing. If these laymen are allowed to go unsupervised and uncontrolled, they will do a great deal of harm. Medical men must retain leadership and control, it seems to me, in matters like this. Proper hearing tests for every child are going to be demanded but physicians must control and direct these tests, and, if legislation is needed to keep this control, it should be seriously considered.

DR. LOCKEN: We should not overlook the fact that large Federal grants for aid to the blind will be available in Minnesota as soon as laws are passed to qualify under the act. We must be alert to developments in this field, also, in order to retain proper leadership and control in medical matters.

Adjournment for lunch.

Drs. V. D. Irwin, L. M. Cruttenden, D. W. Wilson, Minnesota State Dental Association, introduced; also Dr. H. S. Diehl, Dean of the Medical School, and Mr. Johnson, pharmacist.

DR. DIEHL: I can assure you, as representative of the medical school, that we are very sincerely interested in the problems you are considering here today. It is our responsibility to prepare students to take their place with you in the ranks of the practitioners. In so doing we must acquaint them with the social-economic conditions which they must face when they are out in practice.

It occurs to me that we may be able to assist you by participating in studies of certain aspects of the problems you are considering. We can help perhaps by collecting information and helping to analyze data. If so, I am sure the members of our faculty will be the most happy to contribute in any way possible.

Dr. R. G. Leland (Director of the Bureau of Medical Economics, American Medical Association): (For Dr. Leland's talk see the December 1936 issue, Medical Economics section, pages 803-804.)

DR. C. B. WRIGHT, Minneapolis: I came here hoping that Minnesota would be able to give to the country something constructive on the important problems involved in the care of the indigent. I have listened carefully to the discussions and I feel that I shall not be disappointed. We are really working sanely and conservatively and we shall be able to lay down a few general principles, at least, that will help not only the politicians but the public itself to form the best ways of caring for the people.

DR. LOCKEN: We are ready now for the report of the Reference Committee. The Reference Committee has based its recommendation upon the questions brought up in the letter sent to delegates to this house last week in preparation for this meeting.

DR. MCLEOD (Chairman):

Question 1—Do you believe that the recipient of relief should have the right to select the physician who is to render medical and surgical treatment to him or members of his family?

Answer—We recommend that where medical aid is to be rendered to a recipient of relief in any form, the recipient or his guardian should have the right to choose his own physician.

Question 2—In the event hospitalization is necessary do you believe this right should extend to the selection of the hospital?

Answer—We recommend that where local private hospital facilities are available, adequate and practicable, the recipent of relief or his guardian should have the choice of institution.

Question 3—The House of Delegates at the last state meeting at Rochester expressed its opinion that the county system of the care of the indigent is preferable to the town system. If the legislature should create a county welfare board in each county do you believe that a physician and surgeon who is duly licensed to practice medicine in the state of Minnesota, and who is a member of the local, county or district medical society, should be a member of such county welfare board? (a) In what manner do you believe such physician should be selected? (b) Do you believe that a physician and surgeon who is a member of such a county welfare board should render professional services to the recipient of relief?

Answer—We suggest that this body should take no action on this matter. The first part is controversial, and it is not a question that the medical profession is going to be able to settle. It is doubtful whether the legislature will be able to settle it in this session. So far as a physician going on the board is concerned, we felt that that matter, also, was going to provide too many openings for argument at this time. Therefore, we suggest no action.

Question 4—Do you believe that the allowance for professional services should be paid to the recipient of relief or direct to the physician? (a) If the patient is on so-called direct relief? (b) If the patient is on so-called work relief?

Answer—We recommend that allowances for medical services for recipients of relief of any kind should be paid directly to the physician.

Question 5—What form of authorization, exclusive of emergency cases, do you believe to be the most satisfactory and practical, taking into consideration—(a) The needs of the patient; (b) The orderly administration of relief; (c) The assured payment of the bill.

Answer—We recommend that all forms of authorization for medical relief services shall continue as they are set up at the present time. In other words, the SERA authorization forms which were put into effect by the state some time ago at the request of Dr. Meyerding and this Association, should carry on.

Question 6—Are you opposed to the so-called practice of "bidding" in the rendering of professional services to the recipients of relief?

Answer—We are opposed to the so-called practice of bidding for rendering of medical services, and believe that we should adhere to the principle we established in the first article, the right of choice of physician.

Question 7—Do you believe that the furnishing of adequate medical and surgical attention to a recipient of relief is of sufficient importance, not only from an economic standpoint but from the point of view of the patient, the taxpayer and the state of Minnesota, to warrant a separate consideration of each case?

Answer—Yes.

Question 8—Do you believe that occasionally there are individuals in the community who are in need of medical relief, who are not on relief in so far as the other necessaries of life are concerned?

Answer—Yes.

There was some discussion in which several members, notably Dr. Herman Linde, Cyrus; Dr. A. G. Chadbourn, Heron Lake; Dr. Nels Westby, Madison; Dr. T. F. Hammermeister, New Ulm; Dr. Chester Stewart, Minneapolis; Dr. W. W. Will, Bertha; Dr. W. F. Braasch, Rochester; Dr. W. A. Coventry, Duluth; and Dr. Monte Piper, Rochester, took part as to how far the indigent patient could safely be allowed his choice when, for instance, he insisted upon calling a physician from an unreasonable distance or upon going to a hospital at an unreasonable distance when a good hospital is available near by. The committee representatives felt, however, that the words "adequate, available and practicable" covered the objection.

There was some discussion, also, as to the advisability of suggesting to the Legislature that the county system for handling care for the indigent be established by law in place of the township system.

Dr. McLeod, at the request of the speaker, explained that the purpose of the committee was merely to lay down certain fundamentals to medical care, not to interfere in a matter which is after all up to the Legislature. He suggested that physicians who wish such a reform should go back to their own representatives, county commissioners and officials and work for a change, not as physicians but as public spirited citizens.

Dr. Wright suggested that the Legislative Committee, in the preamble to its recommendations to the Interim Committee, endorse and approve the use of medical advisory committees in each county to audit bills and settle difficulties.

Dr. W. F. Braasch suggested that a statement be included making it clear that the duty of the physician is first to take care of the sick, whether or not they have funds to pay for such care.

Dr. Wright suggested that the Committee also include in its preamble a general statement recognizing the responsibility of physicians under all circumstances to the sick.

The report of the Reference Committee was accepted section by section and then as a whole with the preamble and statements suggested .

The meeting adjourned at 3:15 p. m.

REVISED CONSTITUTION

THE following Revised Constitution and By-Laws are to be voted upon in their final form at the Annual Meeting in May. If they are passed at that time, they will go into effect immediately.

ARTICLE I—NAME OF THE ASSOCIATION

The name of this organization is the MINNESOTA STATE MEDICAL ASSOCIATION.

ARTICLE II—PURPOSES OF THE ASSOCIATION

The purposes of this Association are to bring into one compact organization the entire medical profession of the State of Minnesota and to unite with similar societies of other states to form the American Medical Association; to promote the science and art of medicine; to elevate the standard of medical education; and to promote public health.

ARTICLE III—COMPONENT SOCIETIES AND COUNCILOR DISTRICTS

Section 1. The membership of this Association shall be organized into county and district medical societies. The functions of each such society and its relation to the Association shall be defined in a charter issued to it by the Association. Every charter so issued shall be subject to amendment and to revocation by the Association in such manner as may be prescribed in the By-Laws of the Association.

Sec. 2. A component county society is an aggregation of members of this Association living in one county.

Sec. 3. A component district society is an aggregation of members of this Association living in such districts as to make the organization of individual county societies inadvisable, or an amalgamation of two or more counties.

Sec. 4. The House of Delegates may provide for the organization of such councilor districts as will promote the welfare of the Association, such districts to be composed of component societies.

ARTICLE IV—COMPOSITION OF THE ASSOCIATION

This Association shall consist of active, affiliate, honorary, and associate members, who conform with the provisions for such membership as hereinafter provided in the By-Laws.

ARTICLE V—HOUSE OF DELEGATES

The House of Delegates shall be the governing body of the Association, and shall consist of the delegates elected by the component societies to represent them. The following shall have the privileges of the floor, but without the right to vote: the President, the President-Elect, the Councilors, the Secretary, the Treasurer, the Past Presidents, and the Delegates to the American Medical Association.

ARTICLE VI—COUNCIL

The Council shall be the executive body of the Association. The Council shall have the full authority and power of the House of Delegates between Annual Sessions, unless the House of Delegates shall be called into special session as provided for in the By-Laws. The Council shall consist of the Councilors and ex-officio but without the right to vote, the President, the President-Elect, the immediate past President, the Secretary, the Treasurer, and the Speaker of the

House of Delegates. A majority of the Councilors shall constitute a quorum.

ARTICLE VII—ANNUAL SESSIONS AND MEETINGS

Section 1. This Association shall hold an Annual Session, during which there shall be held General Meetings, which shall be open to all registered members and guests.

Sec. 2. The general time and place for holding each Annual Session shall be fixed by the House of Delegates, provided that the exact date of the Session may be fixed by the Council.

Sec. 3. Special Meetings of either the Association or the House of Delegates may be called by the President on a two-thirds vote of the Council or upon petition by twenty delegates representing at least ten component societies.

Sec. 4. All Meetings of the Council may be called by the Chairman of the Council or upon petition by three Councilors.

ARTICLE VIII—OFFICERS

Section 1. The officers of this Association shall be a President, a President-Elect, two Vice-Presidents, a Secretary, a Treasurer, a Speaker and Vice-Speaker of the House of Delegates, and a Councilor for each Councilor District. These officers shall be elected by the House of Delegates as hereinafter provided in the By-Laws.

Sec. 2. There shall be elected at the Annual Session one who shall be known as President-Elect until the beginning of the next calendar year which is also the fiscal year of the Association, at which time he automatically becomes president, to serve as such for one year.

Sec. 3. The other officers, except the Councilors, shall be elected annually. The terms of the Councilors shall be for three years. As nearly as possible, one-third of the members of the Council shall be elected each year.

Sec. 4. The Delegates and Alternate Delegates to represent this Association at the House of Delegates of the American Medical Association shall be elected in accordance with the Constitution and By-Laws of the American Medical Association.

Sec. 5. Terms of office of the officers and committeemen, unless otherwise provided, shall be for a term of one year from January first following the date of their election.

All the officers shall serve until their successors are elected and installed.

Sec. 6. In case of vacancy in an office, unless otherwise provided for in this Constitution or By-Laws, the Council shall have the power to appoint temporarily a successor, until the House of Delegates shall meet and reëlect one, or until the next Annual Session.

ARTICLE IX—FUNDS AND EXPENSES

The Annual Dues shall be determined by the House of Delegates, but shall not exceed the sum of Fifteen Dollars ($15.00) per capita per annum except on a two-thirds vote of the Delegates present. Funds may also be raised from the Association's publications, by voluntary contributions, and in other manner approved by the House of Delegates. Funds may be appropriated by the House of Delegates to defray the expenses of the Association, for scientific and educational publications, and for such other purposes as will promote the advancement of medicine. All resolutions appropriating funds must be approved by the Council before action is taken thereon.

ARTICLE X—THE SEAL

The Association shall have a common Seal, and the House of Delegates shall have power to break, change or renew the same.

ARTICLE XI—AMENDMENTS

Section 1. The House of Delegates may amend any article of this Constitution by a two-thirds vote of the Delegates present at any Annual Session, provided that such amendment shall have been submitted to the membership in writing and published in the official Journal of the Association not less than three months before the meeting at which final action is to be taken.

Sec. 2. The House of Delegates, at any Annual Session, may instruct the Council to make any changes in the Articles of Incorporation in accordance with the law, which may appear desirable or which may be made necessary by any change or amendment to the Constitution and By-Laws of the Association.

Sec. 3. Upon adoption of this Constitution all previous Constitutions are thereby repealed.

ARTICLE XII—BY-LAWS

The authority for passing By-Laws to the Constitution of the Association shall be vested in the House of Delegates.

REVISED BY-LAWS

CHAPTER I—MEMBERSHIP

Section 1. All members in good standing of the component societies are members of this Association. A component society, however, which is delinquent in the payment of its annual assessments or the rendering of required reports to the Secretary of the Association shall not be permitted to participate in any of the business or proceedings of the House of Delegates or of the Association during such delinquency.

Sec. 2. Membership. The membership of this Association shall comprise all members of its component societies. Any person when he becomes a member shall agree to abide by the Articles of Incorporation, the Constitution and the By-Laws of this Association, or any changes which from time to time may be made in them, providing that he has been given notice of such change. He further agrees to abide by the Constitution and By-Laws of the Association regarding admission and expulsion and the code of ethics as laid down by the American Medical Association as it now exists or may hereafter be amended. However, any member convicted of a felony is automatically removed from membership and can only become a member by reapplication as a new member.

Sec. 3. Active Members. Active members shall comprise all the active members of component societies. No person shall be eligible for election to active membership in a component society unless he shall hold the degree of doctor of medicine, issued to him by an institution of learning accredited by the American Medical Association at the time of conferring such degree, and is licensed to practice in this state.

No person shall be considered an active member until his dues and assessments for the current year have been received at the headquarters of the Association.

Sec. 4. Affiliate Members. Affiliate members shall be those members of component societies (1) who through disability are unable to engage in the active practice of medicine, or (2) who have retired from the practice of medicine but who have been active members up to the time they applied for affiliate membership; provided however, that such member in either class shall have first been declared an affiliate member of such component society at its regular meeting, such action having been approved by the Council; and provided further, that such affiliate membership shall automatically cease and revert to its previous status upon the termination of the disability or upon the resumption

of active practice. Affiliate members shall not pay dues and shall not have the right to vote or hold office.

Sec. 5. Honorary Members. The House of Delegates on recommendation of the Council may elect as honorary members any doctors of medicine who are distinguished for their services or attainments in the field of medicine, public health, research, or other scientific work contributing to medicine. Honorary members shall not pay dues and shall not have the right to vote or hold office.

Sec. 6. Associate Members. The House of Delegates on recommendation of the Council may elect as associate members any persons who are distinguished for their services in the allied sciences or in the field of public health. Associate members shall not pay dues and shall not have the right to vote or hold office.

Sec. 7. Nothing in Sections 3, 4, 5, and 6 shall in any manner invalidate an active, affiliate, honorary, or associate member in good standing at the time of the adoption of this Constitution and By-Laws.

Sec. 8. Guests. Any distinguished physician not a resident of this state who is a member of his own State Association may become a guest during an Annual Session on invitation of the officers of this Association, and shall be accorded the privilege of participating in all of the scientific work for that Session.

Sec. 9. Active members shall enjoy all the rights and privileges of the Association, including their subscriptions to MINNESOTA MEDICINE. Affiliate, Honorary, and Associate members shall have all the rights and privileges of active members except those of voting and holding office. They shall be exempt from all dues and assessments, except that they shall not be entitled to copies of MINNESOTA MEDICINE without subscription.

CHAPTER II—HOUSE OF DELEGATES

Section 1. Each component society shall be entitled to send to the House of Delegates each year one delegate, or one corresponding alternate delegate, for every fifty full-paid members, and one for any fraction thereof, but each component society which has made its annual report and paid its assessments as provided in this Constitution and By-Laws, shall be entitled to one delegate.

With the approval of the Council, a component society which previously has been entitled to a delegate or delegates, upon merging with an adjoining component society may retain its right to representation in the House of Delegates provided such society maintains a membership of five or more members.

If there are no delegates or alternate delegates from component societies present at the Annual Session, the House of Delegates may elect acting delegates from among active members of such component societies present at the Session. These acting delegates shall have all the rights and privileges of regular delegates at the Session to which they are elected, but only in the absence of the regular or alternate delegates.

Sec. 2. Twenty delegates shall constitute a quorum. All meetings of the House of Delegates shall be open to members of the Association.

Sec. 3. The House of Delegates, hereinafter termed the House, shall meet on the first day of the Annual Session. It may adjourn from time to time as may be necessary to complete its business, provided that its hours shall conflict as little as possible with the General Meetings. The order of business shall be arranged as a separate section of the program.

Sec. 4. The House shall, at its second meeting at the Annual Session, elect all the officers of the Association except the President. No delegate shall be eligible to the office of President-Elect, and no person shall be elected to any office who is not in attendance upon that Annual Session and who has not been a member of the Association for the past two years. The Speaker and Vice-Speaker of the House may but need not be elected from among the members of the House.

Sec. 5. The House shall, at its second meeting at the Annual Session elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body, and as is hereinafter provided.

Sec. 6. The chairman of the various appointed committees may attend the regular meetings of the House but without the right to vote. They may participate in debate on their own reports, and on invitation of the House.

Sec. 7. The Speaker, to expediate proceedings, shall appoint from the House such reference committees as he deems necessary to carry out the business of the House.

Sec. 8. The House shall, upon application, provide and issue charters to county or district societies organized to conform to this Constitution and By-Laws.

Sec. 9. The House shall divide the State into Councilor Districts, specifying what counties each district shall include, and may organize in each a medical society of the Councilor District.

CHAPTER III—ELECTION OF OFFICERS

Section 1. The manner of elections shall be determined by the assembled House, and a majority of the votes cast shall be necessary to elect.

Sec. 2. The election of officers shall be the first order of business of the House after the reading of the minutes at its second meeting.

Sec. 3. Any person known to have solicited votes for or sought any office within the gift of this Association shall be ineligible for any office for two years.

CHAPTER IV—DUTIES OF OFFICERS

Section 1. The President shall preside at all meetings of the Association except at the meetings of the House. He shall be an ex-officio member of the Council and the House, but without the right to vote. He shall appoint, with the approval of the Council, all scientific committees, not otherwise provided for. He shall deliver an annual address before the General Assembly and the House and perform such other duties as are herein provided in the Constitution and By-Laws.

Sec. 2. The President-Elect shall be an ex-officio member of the Council and House, but without the right to vote.

Sec. 3. The Vice-Presidents shall assist the President in the discharge of his duties. In case of the President's death, resignation, removal, or inability to function, the First Vice-President shall officiate during the unexpired term.

Sec. 4. The Speaker shall preside at the meetings of the House and shall perform such duties as custom and parliamentary usage require. He shall appoint the reference committees of the House. He shall have the right to vote only when his vote shall be the deciding vote. He shall be an ex-officio member of the Council but without the right to vote.

Sec. 5. The Vice-Speakers shall officiate for the Speaker in the latter's absence or at his request. In case of death, resignation, or removal of the Speaker, the Vice-Speaker shall officiate during the unexpired term.

Sec. 6. The Treasurer shall give bond in such sum as the Council may require. The Council shall execute said bond with some indemnity company at the expense of the Association. The Treasurer shall be ex-officio member of the Council and the House, but without the right to vote. He shall demand and receive all funds due the Association together with be-

quests and donations. He shall pay money out of the treasury only on a written order of the Chairman of the Council, countersigned by the Secretary of the Association; he shall subject his accounts to such examinations as the House may order, and he shall annually render an account of his expenditures and of the state of the funds in his hands. The amount of his salary shall be fixed by the Council. The Council may at its discretion allow the Secretary a revolving fund of such moneys as it deems advisable. This money may be expended by the Secretary for such administrative purposes as he deems necessary.

Sec. 7. The Secretary shall give bond in such sum as the Council may require. The Council shall execute said bond with some indemnity company at the expense of the Association. The Secretary shall attend the General Meetings of the Association and the meetings of the House, and shall keep minutes of their respective proceedings in separate record books. He shall be ex-officio Secretary of the Council, but without the right to vote. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer, and shall keep accounts of and promptly turn over to the Treasurer all funds of the Association which come into his hands.

He shall provide for the registration of the members and delegates at Annual Sessions and shall act as Business Manager for the Annual Session. Under direct supervision of the Council, he shall arrange for and have charge of the scientific and technical exhibits; collect and bank such funds received in connection thereto. He shall maintain a checking account for current expenses of the exhibits throughout the year but shall turn the balance of the funds not required into the general treasury.

He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistants as may be ordered by the Council, and shall make an annual report to the House. He shall supply each component society with the necessary blanks for making their annual reports; shall keep an account with the component societies, charging against each society its assessments, collect the same, and at once turn it over to the Treasurer. He shall prepare and issue all programs. The amount of his salary shall be fixed by the Council. The Secretary shall present to the Association on the last day of the Annual Session, a summary of the proceedings of the Council and the House.

He shall with the coöperation of the secretaries of the component societies keep a register of all the legal practitioners of the State by counties, noting on each his status in relation to his component society, and on request, shall transmit a copy of this list to the American Medical Association.

CHAPTER V—COUNCIL

Section 1. The Council shall have full authority and power of the House between Annual Sessions, unless the House shall be called into session as provided in the Constitution and By-Laws. It shall consist of the Councilors and ex-officio but without the right to vote, the President, the President-Elect, the Secretary and Treasurer of the Association, and the Speaker of the House. A majority of its members shall constitute a quorum.

Sec. 2. The Council shall serve as the Finance Committee of the Association and perform such other functions as may be prescribed in the Constitution, By-Laws, and the Articles of Incorporation.

Sec. 3. The Council shall be the board of censors of the Association. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies, or to the Association. All questions of an ethical nature brought before the House or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or component societies on which an appeal is taken from the decision of an individual Councilor, and its decision in all such matters shall be final.

Sec. 4. The Council shall meet on the first day of the Annual Session and daily during the Session and at such other times as necessity may require, subject to the call of the Chairman, or on petition of three Councilors. It shall elect a chairman and a clerk, who, in the absence of the Secretary of the Association, shall keep a record of its proceedings. It shall, through its chairman, make an annual report to the House.

Sec. 5. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Association, and shall have authority to approve the appointment of the editor and such assistants as the Editing and Publishing Committee deem necessary. It shall determine the salaries of all employees of the Association. All money received by the Council and its agents, resulting from the discharge of the duties assigned to them, must be paid to the Treasurer of the Association. As the Finance Committee it shall annually supervise the auditing of the Asociation and present a statement of the same in its annual report to the House, which report shall also specify the character and cost of all the publications of the Association during the year, and the amount of all other property belonging to the Association under its control, with such suggestions as it may deem necessary.

Sec. 6. The Council shall fill any vacancy not otherwise provided for which may occur during the interval between Annual Sessions of the House; the appointee shall serve until his successor has been elected and installed.

Sec. 7. The Council shall nominate and present to the House a list of nominations for Delegates to the American Medical Association to be voted upon by the House. Additional nominations may be made from the floor of the House.

Sec. 8. The Council may at its discretion: employ expert assistance in auditing the various records of the officers and committees of the Association; employ such help as it may deem necessary to facilitate the work of the Association; and allot for expenditures such moneys as are budgeted for the Committee on Public Policy and Legislation.

Sec. 9. The Council shall discharge such duties as are provided by law.

Sec. 10. The Council shall be empowered to invest and reinvest such monies as may be available from time to time for the creation and building up of a reserve or sinking fund. A three-fourths vote of the Council shall be necessary to authorize expenditures from this fund other than for investment or reinvestment. It may at its discretion engage the services of a Trust Company to assist in the investment and reinvestment of this fund.

Sec. 11. The Council shall appoint all non-scientific committees, not otherwise provided for in the By-Laws.

Sec. 12. Each Councilor shall be organizer, peacemaker and censor for his district. He shall visit the counties in his district when necessary for the purpose of organizing component societies where none exists; for inquiring into the condition of the profession, and for improving and increasing the zeal of the county societies and their members. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the Council on a proper itemized statement, and each Councilor may

receive as compensation a per diem of $10.00 while engaged in making his official visits to the counties in his district, or in attendance at duly authorized special meetings of the Council, but this shall not be construed to include his expense in attending the Annual Session of the Association.

CHAPTER VI—COMMITTEES

Section. 1. There shall be two classes of committees: scientific and non-scientific. All committees shall consist of five members unless otherwise specified in this Constitution and By-Laws. The President may at his discretion, with the approval of the Council, increase or decrease the number of members of any committee. The President and Secretary of the Association shall be ex-officio members of all committees. All committees shall make an annual report to the House.

Sec. 2. The scientific committees shall be appointed by the President with the approval of the Council and shall consist of the following:

Scientific Assembly
  a. Local Arrangements
Cancer
Diabetes
Heart
Syphilis and Social Diseases
Deafness Prevention and Amelioration
Hospitals and Medical Education
  a. Public Health Nursing
  b. Schools for Laboratory Technicians
Maternal Welfare
Military Affairs
Historical
And such other scientific committees as may be deemed necessary.

Sec. 3. The non-scientific committees shall be appointed by the Council and shall consist of the following:

Public Policy and Legislation
Interprofessional Relationship
University Relations
Public Health Education
Editing and Publishing
Medical Economics
County Contact
And such other non-scientific committees as may be deemed necessary.

Sec. 4. The duties of the scientific committees shall be as follows:

1. Committee on Scientific Assembly. This committee shall be subdivided into three sections: Section on Medicine, Section on Surgery, and Section on Specialties. The President shall appoint annually a secretary for each of the sections, which secretary shall automatically become chairman of his section the following year, thus serving a two year term, with the exception that for the year 1938, the President shall also appoint a chairman of each section for a term of one year.

The membership of the Committee on Scientific Assembly shall consist of the Chairman and Secretary of the sections on Medicine, Surgery, and Specialties, the President, the President-Elect, the Secretary of the Association, and ex-officio, the Chairman of the Committee on Local Arrangements. The President shall act as Chairman. The Secretary of the Association shall have general charge of the arrangements and shall act as Business Manager for the scientific and technical exhibits under the direct supervision of the Council. It shall be the duty of the section chairmen to preside over the meetings of their respective sections. The secretary of the section shall preside for the chairman in the latter's absence or at his request.

This Committee shall collaborate with the Committee on Local Arrangements to the best interests of the Annual Session.

a. The Committee on Local Arrangements. With the approval of the Council, the Committee on Local Arrangements shall be appointed by the component society of the county in which the Annual Session is to be held; it shall provide suitable accommodations for the meeting places of the Association and of the House, and of their respective committees; and the Chairman of the Committee on Local Arrangements shall assist the Secretary of the Association in making local arrangements.

2. The Committee on Cancer. This committee shall consist of fifteen members, five of which shall be appointed annually for a three year period. Its function shall be to keep the profession informed as to the latest scientific knowledge on the subject of cancer and to encourage local education of the public.

3. The Committee on Diabetes. Its function shall be to encourage the extension of medical knowledge and research into causes and treatment of diabetic disease and also to coöperate with the Committee on Public Health Education in the extension of necessary knowledge of the disease.

4. The Heart Committee. Its function shall be to promote scientific interest and progress in all phases of heart disease and to extend to the public through the Committee on Public Health Education essential education in the prevention and treatment of the disease.

5. The Committee on Syphilis and Social Diseases. Its function shall be to study the problems of prevention and control of syphilis and social diseases.

6. The Committee on Deafness Prevention and Amelioration. Its function shall be to stimulate interest in the prevention and amelioration of this affliction.

7. The Committee on Hospitals and Medical Education. Its function shall be: to give information and recommendations, if indicated to the Association in matters pertaining to medical education in the State; to encourage and develop local comprehensive programs for postgraduate instruction and in coöperation with the faculty of the University to arrange for additional courses to be given at a minimum of expense and loss of time; to maintain jurisdiction over the standardization of hospitals within the State, and in coöperation with the American Medical Association which maintains bureaus of standardization to see that such standards are maintained. The chairman of this committee shall be a representative of this Association at the annual congress of Medical Education and Medical Licensure. Public Health and Hospitals of the American Medical Association.

a. The Committee on Public Health Nursing. Its function shall be to study and act in an advisory capacity in conjunction with the Minnesota Organization for Public Health Nursing.

b. The Committee on Schools for Laboratory Technicians. Its function shall be to investigate and report on all schools for laboratory technicians; to formulate standards and makes recommendations as to the qualifications of schools as a guide to members who wish to engage the services of graduates of these schools.

8. The Committee on Maternal Welfare. Its function shall be to promote medical interest and progress in maternal and child welfare; to assist, through the Committee on Public Health Education, in the education of the public.

9. The Committee on Military Affairs. Its function shall be to maintain a constant contact with all branches of the military service and to promote and assist a proper medical coöperation at all times with the army and navy.

10. The Historical Committee. Its function shall be to assemble records of the medical history of this Association.

Sec. 5. The duties of the non-scientific committees shall be as follows:

1. The Committee on Public Policy and Legislation. This Committee shall include the President and Secretary of the Association. Under the direction of the House, it shall represent the Association in securing and enforcing legislation in the interest of public health and scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall strive to organize professional influence so as to promote the general good of the community in local, state and national affairs.

2. The Interprofessional Relationship Committee. Its function shall be to endeavor to bring about a better understanding and coöperation between the different interprofessional groups allied with the practice of medicine and also other groups that should coöperate in the practice of medicine.

3. The Committee on University Relations. Its function shall be to act as a contact committee with the University of Minnesota and its officials. Such problems as affect the medical profession shall be referred to this committee and they shall bring it to the attention of the proper authorities.

4. The Committee on Public Health Education. This committee shall consist of an executive committee and sub-committees.

The standing sub-committees shall be:

Child Welfare
Speakers' Bureau
Editorial
Tuberculosis
Radio
Red Cross
First Aid

The chairman may appoint such other sub-committees as he deems advisable and assign to each subcommittee as many members as he deems proper, subject to the approval of the Council.

The function of this committee shall be, first to strive to develop an intelligent public viewpoint toward the medical profession and public health education by means of the press, the lecture platform, and the radio; second, to coöperate with the various agencies throughout the state whose function is the promotion of public health, and whose governing bodies are composed in whole or in part of laymen, so that from a medical standpoint these agencies shall be intelligently administered; third, to use such measures throughout the State as may be necessary to eliminate fradulent medical advertisements from the public press; fourth, to aid and encourage each component society to conduct at least one annual public health meeting.

5. The Editing and Publishing Committee. This committee shall consist of five members, one of which shall be appointed annually for a period of five years.

The Editing and Publishing Committee shall have the responsibility of editing and publishing MINNESOTA MEDICINE; the committee shall appoint an editor and business manager and a sufficient number of assistants and shall determine their compensation: this shall be subject to the approval of the Council.

The State Association shall pay the Editing and Publishing Committee the sum of two dollars per year per active member in consideration for which each active member of the Association shall receive a copy of the Journal for one year.

Associate editors may be appointed by the Editing and Publishing Committee.

A section on medical economics shall be printed each month in MINNESOTA MEDICINE under the direction of the Council. The chairman of the Committee on Medical Economics shall have charge of this section under the title of assistant editor. He shall be ex-officio member of the Editing and Publishing Committtee and shall attend the meetings of this body.

In matters of general policy pertaining to the welfare of the Association, the Editing and Publishing Committee shall defer to the requests from the Council.

6. The Committee on Medical Economics. This committee shall consist of an executive committee composed of the chairman, the chairmen of sub-committees, and the chairmen of the Committee on Public Policy and Legislation and the Committee on Public Health Education. The duties of this executive committee shall be the coördinating of the general program. Three members shall constitute a quorum.

The sub-committees of the Medical Economics Committee shall be appointed by the chairman of the Medical Economics Committee with the approval of the Council, and shall consist of the following:

a. The Editorial Committtee. It shall be responsible for the editing and compiling of the medical economics section which is published each month in MINNESOTA MEDICINE. The chairman of the Committee on Medical Economics shall be the chairman of this subcommittee.

b. The Committee on Professional Education in Medical Ethics and Social and Economic Trends. Its function shall be: (1) to promote knowledge in medical ethics and social and economic trends among medical students and the medical profession in Minnesota. It shall endeavor to secure and maintain a course on these subjects at the Medical School at the University of Minnesota.

c. The Medico-Legal Advisory Committee. Its function shall be: (1) to study the questions pertaining to insurance, especially malpractice insurance as it affects the profession; and (2) to study and advise in legal affairs that affect the profession.

d. The Committee on State Health Relations. Its function shall be: (1) to study the activities of the various State or Governmental Agencies and their relation to the practice of medicine: and (2) to coöperate with these various State and Governmental Agencies whose function is the promotion of public health in maintaining the welfare of the public.

e. The Committee on Low Income and Indigent Problems. Its function shall be to study and present methods and plans for the care of these two groups.

This committee shall make its reports to the executive committee of the Medical Economics Committee. All plans concerning the medical care of the indigent, before being presented to the membership at large must be approved by the executive committee of the Medical Economics Committee and the Council or the House.

f. The Committee on Industrial Relations. Its function shall be to discuss and recommend a policy on the various industrial questions that arise and that affect the medical profession. It shall work in coöperation with the industrial organizations to improve the conditions that affect the medical profession.

g. The Committee on Contract Practice. Its function shall be to study existing forms of contract practice and to inform and advise the executive committee of the Medical Economics Committee upon these and upon all proposed plans for contract practice in Minnesota.

7. The County Contact Committees of Three. They shall consist of three physicians practicing in the county in which they live, and appointed by their local component societies. Their functions shall be to study the medical and health problems so far as they are related to the best interests of the public and coöperate with

their component medical society and the Medical Economics Committee.

CHAPTER VII—COUNTY AND DISTRICT SOCIETIES

Section 1. All county and district societies now in affiliation with the Association or those which may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, on application, receive a charter from and become a component part of the Association.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no component society exists, and charters shall be issued thereto.

Sec. 3. Charters shall be issued only upon approval of the House, and shall be signed by the President and Secretary of the Association. The House shall have the authority to revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Only one component medical society shall be chartered in any county. Where more than one county society exists, all members should be brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

Sec. 5. In sparsely settled sections the House shall have authority to organize the physicians of two or more counties into societies to be designated by hyphenating the names of two or more counties so as to distinguish them from other classes of societies, and these societies, when organized and chartered, shall be entitled to all the privileges and representation provided herein for county societies, until such counties may be organized separately.

Sec. 6. Each component society shall have general direction of the affairs of the profession in its county or district, and its influence shall be constantly exerted for bettering the scientific, moral, and educational condition of the county or district; and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county or district.

Sec. 7 Each component society shall judge of the qualifications of its own members, but, as such societies are the only portals to this Association and to the American Medical Association, ample opportunity to become a member shall be given to every physician in the county or district, who is eligible according to the provisions in this Constitution and By-Laws.

Sec. 8. Any physician who may feel aggrieved by the action of the society of his county or district in refusing him membership, or in suspending, censoring, or expelling him, shall have the right to appeal to the Council, and if he desires, to the Judicial Council of the American Medical Association. Decision of the latter shall be final.

Sec. 9. In hearing appeals the Council may admit oral or written evidence, as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a Board and as individual Councilors, in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 10. A physician living on or near a county line may hold his membership in the component society most convenient for him to attend, on permission of the society under whose jurisdiction he resides.

Sec. 11. At some meeting in advance of the Annual Session, each component society shall elect a delegate or delegates and an alternate or alternates to represent it in the House, in the proportion of one delegate to each fifty members or any fraction thereof, and the secretary of each society shall send a list of such delegates to the Secretary of the Association two months before the date fixed for the Annual Session.

Sec. 12. The secretary of each component society shall keep a roster of its members and of the non-affiliated registered physicians of the county or district, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. In keeping such roster the secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county or district, and in making his annual report he shall be certain to account for every physician who has lived in the county or district during the year.

Sec. 13. The secretary of each component society shall forward the assessment of its members together with its roster of officers and members, list of delegates, and list of non-affiliated physicians of the county or district to the Secretary of the Association each year before December 31.

Sec. 14. Each component society which fails to pay its assessment or make the report required, on or before December thirty-first, shall be held as suspended and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House until such requirements have been met.

Sec. 15. The annual per capita dues to the Association of the members of the component societies shall be determined by the House and shall be paid and forwarded as hereinbefore provided, being payable on or before January first of the year for which they are levied.

CHAPTER VIII—MISCELLANEOUS

Section 1. The Articles of Incorporation, the Constitution, and By-Laws of the Association shall be binding on every county and district society and every member of every such society; anything in the Articles of Incorporation, the Constitution, or the By-Laws of any such society to the contrary notwithstanding.

Sec. 2. A member of this Association must be a member of some component society and conversely a member of a component society must be a member of this Association. An action of the House or of the Council shall be binding upon its members unless otherwise provided.

Sec. 3. The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

Sec. 4. The deliberations of the Association shall be governed by parliamentary usage as contained in Robert's Rules of Order, when not in conflict with this Constitution and By-Laws.

Sec. 5. All papers read before the Association or any of the societies shall become its property. Each paper shall be deposited with the Secretary of the Association when read.

Sec. 6. The time required for delivery of any paper or address before the Association shall be left to the discretion of the Committee on Scientific Assembly.

CHAPTER IX—AMENDMENTS

These By-Laws may be amended at any Annual Session by a majority vote of all the delegates present at the Session, after the amendment has lain on the table for one day.

Upon the adoption of these By-Laws all previous by-laws are thereby repealed.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

Medical Broadcast for January

The Minnesota State Medical Association Morning Health Service

The Minnesota State Medical Association broadcasts weekly at 11:45 o'clock every Wednesday morning over Station WCCO, Minneapolis and Saint Paul (810 kilocycles or 370.2 meters).

Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota.

The program for the month will be as follows:

January 6—Carbon Monoxide Poisoning

January 13—Neglected Head Injuries

January 20—Myxedema

January 27—Crooked Teeth.

International Conference on Fever Therapy

The First International Conference on Fever Therapy will be held March 29, 30 and 31, 1937, at the College of Physicians and Surgeons, Columbia University, New York City! The official language of the conference will be English.

Baron Henri de Rothschild, Paris, is chairman and Dr. William Bierman, New York, secretary of the conference.

Subjects to be discussed are: Physiology, pathology and methods of production of fever; the treatment by fever of miscellaneous diseases, including syphilis.

Registration should be made with the secretary, Dr. William Bierman, 471 Park Avenue, New York City. The registration fee is $15.00.

Judd Lecture

The Fourth Annual Lecture in the E. Starr Judd Lectureship in Surgery, established at the University of Minnesota by the late Dr. E. Starr Judd, will be given by Dr. Evarts A. Graham, Professor of Surgery, Washington University School of Medicine, and Surgeon-in-Chief, Barnes and St. Louis Children's Hospitals, St. Louis, Missouri. The lecture will be held in the Chemistry Auditorium on the University campus in Minneapolis on Wednesday, February 3, at 8:15 p. m. The subject of Dr. Graham's lecture will be "Accomplishments of Thoracic Surgery and its Present Problems."

Kandiyohi-Swift-Meeker Societies

The annual meeting of the Kandiyohi-Swift-Meeker County Medical Society will be held at the Lakeland Hotel, Willmar, Minn., Tuesday, January 29, 1937, at 6:30 P. M., for the election of officers and other business.

Discussion of Medical Economic questions, including the new Social Security proposition in State Medicine, will form part of the evening's program. These are times when the profession must be eternally vigilant. Every member is urged to attend.

Membership dues for both county and state associations are payable January 1, 1937.

The Range Society

The December meeting of the Range Medical Society was held on December 15 at the Park Hotel at Eveleth. An excellent program was provided by several physicians from Duluth and Superior who presented a clinical and pathological conference, ably presided over by Dr. E. L. Tuohy.

New officers were elected as follows: president, Dr. B. S. Adams; vice president, Dr. H. N. Sutherland; secretary, Dr. P. H. MacFarlane; censors, Dr. Arnold Malmstrom and Dr. R. A. Salter

Red River Valley Society

The Red River Valley Medical Society held its annual meeting the evening of December 8, 1936, at 6:30 p. m., in the Hotel Crookston, Crookston. A dinner preceded the meeting, attended by the members, guests, and Women's Auxiliary. Four guests and thirty-seven members were present.

The program was given chiefly to medical economics, the guest speakers being Dr. W. W. Will of Bertha, President of the Minnesota State Medical Association, Dr. W. L. Burnap, Fergus Falls, Councilor of the Eighth District, and Mr. R. R. Rosell of the State office.

The following officers were elected for the year 1937:

President	Dr. J. L. Delmore, Roseau
Vice President	Dr. C. W. Froats, Thief River Falls
Secretary-Treasurer	Dr. C. L. Oppegaard, Crookston
Delegates	Dr. J. F. Norman, Crookston
	Dr. O. E. Locken, Crookston
Alternates	Dr. H. M. Blegen, Warren
	Dr. W. F. Mercil, Crookston
Censor for 3 years	Dr. W. G. Paradis, Crookston

Rice County Society

The Rice County Medical Society held its regular meeting in the Faribault Clinic Rooms, Wednesday evening, December 9, 1936.

Dr. W. D. Beadie, superintendent of Mineral Springs Sanatorium, was the guest speaker and addressed the members on the subject "The Significance of Rest in Tuberculosis." He illustrated his talk with lantern slides.

Election of officers resulted as follows: President, Dr. F. R. Huxley, Faribault; vice president, Dr. O. P. Thorson, Northfield; secretary-treasurer, Dr. C. J. Plonske, Faribault; delegate, Dr. F. J. Lexa, Lonsdale; alternate delegate, Dr. A. M. Hanson, Faribault.

Dr. Charles E. Light of Northfield was elected to membership.

PROCEEDINGS of the MINNESOTA ACADEMY OF MEDICINE

Meeting of November 11, 1936

The Minnesota Academy of Medicine held its regular monthly meeting at the Town and Country Club on Wednesday evening, November 11, 1936. The meeting was called to order by the president, Dr. Thomas S. Roberts. There were forty-seven members and one guest present.

Minutes of the October meeting were read and approved.

Upon ballot the following men were elected as candidates for active membership in the academy:

Dr. E. A. Regnier, Minneapolis
Dr. Justus Ohage, St. Paul
Dr. Gordon A. Kamman, St. Paul

Dr. Carl B. Drake read the following Memorial to Dr. H. T. Nippert and a motion was passed that it be spread upon the records of the Academy and a copy sent to the family

HENRY THEODORE NIPPERT

Dr. Henry Theodore Nippert, known to his more intimate friends as Nip, was born in Heilbron, Wurtemberg, Germany, on February 12, 1868, the son of Reverend Dr. Louis Nippert and Adelaid Lindemann Nippert. His father was an American citizen and was sent to Germany by the Methodist Church to promote Methodism in Germany and Switzerland. Henry Nippert received his early education at Frankfurt-on-Main, graduating from the gymnasium at the age of seventeen, which accounts for his somewhat German accent and his frequently having been taken for a German. On the family's return to America in 1886, he came to Minneapolis, where his brother, the late Dr. Louis Nippert, had already begun practice, and obtained a job as a drug store clerk, which position he held for a year and a half. He then moved to Cincinnati and after two years of study obtained the degree of Ph.G. from the Cincinnati College of Pharmacy. Soon thereafter he began the study of Medicine at the Miami Medical College, a department of the University of Cincinnati, where he was graduated in 1891. He took his internship at the Cincinnati General Hospital.

On August 2, 1893, Henry Nippert was married to Bertha Elizabeth Wendt, of Newport, Kentucky, and began practice in St. Paul. That same year he joined the Ramsey County Medical Society and was president of the Society in 1916. For twenty-five years he had a medical service at the Ancker Hospital and gave clinics to students of the Hamline and University Medical Schools, resigning from the staff in 1919 in favor of younger members of the profession. Henry Nippert joined the Minnesota Academy of Medicine in 1916 and read his thesis "Empyema in Infancy and Childhood" on May 10, 1916, the paper having been published in the St. Paul Medical Journal the same year (Vol. 18, p. 270, 1916).

Henry Nippert died on July 4, 1936, while taking a swim at his summer home on Big Sand Lake. He is survived by his widow; three daughters, Mrs. Vernon D. E. Smith and Mrs. John B. McGrath of St. Paul, and Mrs. Arnulf Ueland of Minneapolis; a son, Carl L. Nippert of St. Paul; two brothers, Dr. Edward Nippert of Los Angeles and Judge Alfred K. Nippert of Cincinnati; three sister, Mrs. Louis Hemlinge of Seattle, and the Misses Eleanor and Mary Nippert of Cincinnati.

Henry Nippert had a very high degree of personal integrity. He was exceedingly frank with his patients where the limitations of therapy were obvious and in every way was a very practical man. His patients, who, particularly in his early years of practice, were largely among the German element of St. Paul, trusted him and regarded him as a friend because of the real sympathy he showed them.

One of his outstanding qualities was his keen sense of humor. He loved a practical joke and could always see the humorous side of a situation. He was a convivial soul.

He loved the country and enjoyed to the utmost the summer months spent at his cabin on Big Sand Lake in northern Minnesota with his family.

Although he never contributed a great deal to medical societies, he was a regular attendant and made staunch friends among his colleagues. He was tolerant of those who held opinion differing from his own and was most considerate of those younger and less experienced in the practice of medicine.

His philosophy towards life, his devotion to his country, friends and profession are well portrayed in the account of his life written by himself some time before his death, which was read at his funeral and published in the August number of the State Journal.

The Minnesota Academy of Medicine has lost one of its best loved members. The society's sincere sympathy is extended to his bereaved family.

(Signed) The Committee:
Frank E. Burch,
William Davis,
Carl B. Drake, *Chairman.*

The scientific program followed.

ASEPTIC URETERO-SIGMOIDOSTOMY

A New Method Providing Definite Asepsis in Respect to Both Fecal and Urinous Soiling

Frederic E. B. Foley, M.D.
Saint Paul

Synopsis

There is no general agreement concerning the importance of fecal soiling in operations for anastomosis of ureter with bowel. It is certain this factor is of some consequence and may, on occasions, determine a fatal outcome.

Avoidance of fecal soiling may be of importance in one or both of two ways. First of these is prevention of infection of the peritoneum and the risk of peritonitis incident to it. Second, and perhaps of greater importance as an object of asepsis, is prevention of infection of tissues at the site of anastomosis and impairment of repair processes incident to it. In the repair process of union between the ureter and the layers of bowel wall, primary union with absence of inflammatory infiltration and cicatrization resulting from infection should be considered desirable for production of a functioning one-way valve and avoidance of urinary obstruction by contraction of the stoma.

Most writers have appeared to think of "aseptic anastomosis" in terms only of avoiding contamination by bowel content and have appeared to regard soiling by urine content as of no importance. There is no assurance that soiling by infected urine does not have importance similar to that of fecal soiling and in these same ways.

Coffey's description of his "Technic No. 3" refers to it as an aseptic method. Quite obviously neither this method or Higgins' extension of it is aseptic. In both methods a "transfixion suture" embracing ureter and bowel walls is tied tightly and establishes a fistulous communication by sloughing through both walls. In placing this suture it passes into and out of both ureter and bowel lumina and contaminates the site of union with both ureter and bowel contents.

The method of Poth more closely approximates definite asepsis but does not give positive protection in this direction. Description and illustration of the method as employed in experimental animals shows it to be entirely too troublesome and cumbersome for clinical use.

The method described here and illustrated by lantern slides is definitely aseptic in respect of both fecal and urinous soiling. It involves use of a newly devised and very simple snare or guillotine instrument within the bowel lumen. With the bowel submucosa exposed by longitudinal incision of the muscularis, the ligated end of ureter, pushing a small invaginated tent of bowel submucosa before it, is inserted into the snare. The two structures are held in the grip of the snare while the ureter is imbedded in the bowel wall by suture and the abdomen closed, all of which is accomplished without even a suture needle penetrating the lumen of either bowel or ureter. After an interval of time allowed for the tissue spaces at the site of transplant to become sealed off, a cutting current is supplied to the instrument as the snare amputates within the bowel lumen the ligated ureter end and invaginated tent of bowel submucosa covering it, thus establishing the uretero-intestinal communication.

The instrument and method have been employed in one case reported in summary as follows:

Ancker Hospital No. A450096. The patient was a female, aged sixty-two. There was extensive carcinoma of urethra with invasion of vesical neck and trigone. Complete retention of urine was present; and there was diminished phthalein excretion, also nitrogen retention. Excretory urography showed normal pelves and ureters. The urethra was dilated and constant drainage with an indwelling catheter improved the renal function and general condition. Irradiation with radium element gave no favorable effect.

Bilateral transplantation of the ureters with a view to total cystectomy was determined upon.

On Dec. 3, 1935, the right ureter was transplanted by the method described. The procedure was executed with perfect facility. The submucosal tent and ureter end were amputated four hours later. Urine came from the bowel on the third day. General condition was excellent on the eleventh day. Temperature elevation and signs of broncho-pneumonia were evident on the twelfth day. The patient died of broncho-pneumonia on the fifteenth day.

Postmortem examination showed excellent healing and union at the site of transplant, no peritoneal exudate or infiltration and no dilatation of the ureter or kidney pelvis.

Discussion

Dr. Arnold Schwyzer (St. Paul): This method looks quite typical of Dr. Foley—it is neat in conception. Nevertheless, the other methods are less complicated and gave me good results. I wonder whether, with this instrument we would not get a stricture through the cauterization of the end of the ureter. I think for those of us who have operated much on the large intestine, a fine thread running through the mucosa of the gut would not mean very great danger of spreading infection, especially as long as there is drainage along the thread right into the gut. In order to avoid a stricture at the ureter opening, I have cut the ureter on a slant. The side with the tip was placed toward the lumen of the gut. In this way, it somewhat protects the opening (for the first days). Again, I wonder whether it would not be well possible to have any mishap with this method. The patient might move around while the instrument is in place. Another question comes up whether the end of the ureter protrudes far enough into the gut to insure against a certain amount of retraction which will follow. Notwithstanding these uncertainties, which practical experience has to decide, the procedure has neat asepsis to its credit.

Dr. Foley (in closing): By way of reply to Dr. Schwyzer's criticism of the method I want to say that it is not cumbersome. By comparison with the usual method of transplanting the ureter to bowel, this instrument and method actually facilitate the procedure. Having the ligated end of ureter held transfixed to the bowel wall in the grip of the instrument is considerably more convenient than inserting it through a stab opening in the submucosa and then placing the fixation sutures without the ureter held in place.

Dr. Schwyzer refers to the results of uretero-sigmoidostomy by usual methods as perfectly satisfactory. This opinion is not generally shared. The immediate operative mortality is out of proportion to the magnitude of the procedure. Most reports are based on

cases in which operation has been performed according to a uniform technic planned to establish a functioning one-way valve. In spite of a uniform method being employed in the case of a series, the results among the cases are not uniformly good. There is considerable evidence to show that the eventual end-result depends on whether or not a good functioning one-way valve has been produced by operation. In the presence of satisfactory valve function the ureter and pelvis do not dilate, the kidney does not become infected and functions normally; in the absence of valve function or in the presence of cicatrization or obstruction at this site, the ureter and pelvis dilate, the kidney becomes infected and finally functionless. It seems to me not unlikely that infection of tissues at the site of transplant is an important factor in determining whether or not a functioning valve will result. With cicatrization and scarring, the result of infection, I would expect either a poorly-functioning valve or obstruction. An aseptic method may diminish the incidence of peritonitis but its real value, if any, appears to me to lie in avoiding infection of the site of transplant and inflammatory thickening of the valve-forming tissues incident to this infection. Such changes occurring with non-aseptic methods appear to me as probably responsible for the poor results.

I have offered the method at this time and without substantial clinical experience to endorse it because I do not have opportunity for animal experimentation and only a very small clinical material, and in the hope that others with better opportunity than mine in these directions will undertake to determine what the value and uses of the method may be.

EXTENSIVE THROMBOPHLEBITIS COMPLICATING MASTOIDITIS

MARTIN NORDLAND, M.D., and WALTER E. CAMP, M.D.

Minneapolis

Lantern slides were shown to demonstrate the anatomy and the operative procedures involved. (Paper to be published in full, in MINNESOTA MEDICINE, later.)

Summary

During the past year the authors had the privilege of seeing two patients with extensive thrombophlebitis of the cranial venous sinuses and internal jugular vein, complicating acute mastoiditis. One of these patients died and the other recovered. The cases are reported in detail because of the interesting problems in diagnosis and pathogenesis.

Sinus thrombophlebitis is one of the most common complications of mastoiditis. The incidence of this complication in both acute and chronic mastoiditis, as reported in several large series of cases in the literature, is about 3.5 per cent. The thrombosis may be manifest, latent or develop postoperatively. Both of our cases were of the manifest type, i.e., present at the time of operation. In one case there was definite evidence of thrombosis at the time of operation. In the other, the diagnosis was suspected because of the clinical findings and x-ray studies, but was not confirmed until operation. In one of the cases the thrombosis was of the *retrograde* type, extending against the blood current; in the other it extended with the blood current into the internal jugular vein down as far as the subclavian vein.

The first case was that of a man forty-four years of age, who came for examination, December 9, 1935, complaining of a sore throat and earache in the right ear. His illness had begun three days previous, with sudden onset of fever, vomiting and diarrhea, sore throat and earache. Examination showed an acute bilateral follicular tonsillitis with exudate on both tonsils. The right ear drum was congested, edematous and showed a spontaneous rupture with serosanguinous exudate. There was tenderness over the mastoid and tenderness over the glands of the neck on each side. Temperature was 101.5°. Three days later he developed severe chills which lasted for four days. Following the chills he developed pain in the chest and right hip. He was placed in a hospital where he was treated by his family physician, until January 10, 1936 (about one month following the onset of his illness), when he was again seen.

During his stay in the hospital he had had continuous headache for two weeks, having a typical septic temperature the first week, ranging from normal in the morning to 102° to 103° in the late afternoon. Chills were frequent but not daily. Examination at this time showed a purulent exudate from the right ear; the drum was thickened, but not bulging. There was no mastoid tenderness, but there was tenderness over both jugulars. The patient stated that there had been some swelling in the right neck which had now receded. There was pain in the right hip, but no swelling. Ophthalmoloscopic examination showed bilateral papilledema of about three diopters with small petechial hemorrhages in both retinæ. White blood count was 20,000 with 86 per cent neutrophiles. X-ray of the mastoids showed dense bilateral sclerosis of all cells and was of little help in diagnosis. Blood culture, after six days, was negative. Spinal puncture showed a marked increase on intracranial pressure. The fluid was not clear, with 43 cells per cu. mm. Tobey-Ayers test was positive on the right, showing occlusion of the right lateral sinus or jugular vein.

A diagnosis of subacute mastoiditis, right ear, with sinus thrombophlebitis, septicemia, and probable brain abscess was made, and on January 12, 1936, the internal jugular was exposed and ligated and the right mastoid was explored. The cortex and mastoid cells were sclerotic, the mastoid antrum was small and filled with pus and granulations. A small perisinus abscess was found on the lateral sinus near the bulb. Aspiration of the sinus with a large needle showed no blood in the sinus. The lateral sinus was widely exposed and opened. A large clot, extending down to the bulb and upward and backward beyond the knee, was removed. Free bleeding was obtained from above, but not from below.

Following the operation there was definite improvement for about one week. The fever remained normal except on two occasions when there was a rise to 100°, but no chills. Severe pain in the head returned and he became listless at times. On one occasion he complained of temporary diplopia. The papilledema showed no improvement and neurological examination showed absence of left abdominal reflex and slight ptosis of the left eyelid. A tentative diagnosis of brain abscess, right temporosphenoidal lobe, was made and exploration advised. On January 28, trephine and exploration of the right temporosphenoidal area failed to reveal any abscess. The patient failed rapidly and died about six hours following the operation. The autopsy findings were essentially negative except for a large thrombus filling completely the right lateral and sigmoid sinuses.

The interesting features in this case are:

First: The early onset of the clinical signs of sepsis suggesting an early bacteremia and probably also an early thrombophlebitis of the right sigmoid sinus. The "head" or oldest segment of the thrombus was found in the jugular bulb. Primary thrombophlebitis of the jugular bulb is rare and probably occurs directly by extension of infection through the floor of the middle ear cavity.

Second: The retrograde extension of the thrombophlebitis against the blood stream after *thrombectomy* and *ligation* of the internal jugular vein.

Third: The early and persistent increase of intracranial pressure with marked papilledema and clinical signs suggesting brain abscess.

The second case was that of a woman, forty-six years of age, who was brought to the hospital in an ambulance, on March 13, 1936. Her illness had begun one month before, with a severe "head cold," and a pain in her left ear which lasted about five days. There was no history of discharge. The earache subsided but she continued to complain of tenderness behind the left ear and in the left temporal region. For three weeks previous to admission she had had daily chills and fever, headache, nausea and vomiting. There had been pain, tenderness and conspicuous swelling of the left side of the neck for the past ten days. Examination, on March 16, 1936, revealed tenderness and diffuse swelling of the left neck extending from the mastoid to the clavicle. The left ear drum was normal. X-ray of both mastoids showed second degree involvement of the left mastoid. Ophthalmoscopic examination showed bilateral papilledema of about four diopters with a few small retinal hemorrhages. Urinalysis showed a large quantity of sugar and acetone, with some diacetic acid. Blood sugar was 236 mgms. Blood culture was negative after 48 hours' growth. Spinal fluid was essentially negative except for markedly increased pressure. Tobey-Ayer test was positive. White blood cells, 14,000.

A diagnosis of masked subacute mastoidtitis, left ear, with sinus thrombophlebitis, was made, and operation advised.

On March 19, the left mastoid was opened. The cells were necrotic and filled with purulent exudate and granulations. Lateral sinus was exposed and found filled with a large thrombus extending from the torcula to the bulb of the jugular. A transverse incision, down through the superficial layer of the deep cervical fascia, revealed a large abscess of the neck, with complete necrosis of the left jugular vein. Drainage was established and a slow but steady improvement occurred. The urine became sugar-free and blood sugar returned to normal one week following the operation. The papilledema gradually subsided and on April 17, 1936, the corrected vision was 20/20 when the patient seemed fully recovered.

The interesting features of this case are:

1. The development of an advanced mastoiditis without perforation of the tympanic membrane. There was tenderness over the mastoid, but no external swelling.
2. The massive thrombophlebitis beginning in the lateral sinus and extending with the blood stream to involve the entire jugular vein.
3. Complete recovery without complication.

Discussion

DR. C. N. SPRATT (Minneapolis): In my experience, lateral sinus thrombosis has not been a serious complication in mastoditis. In the thirty years in which I did ear work, twenty-one cases of sinus involvement or approximately 7 per cent of the mastoids operated on had this complication. There were four deaths in this series. Two of these were associated with meningitis and the other two were uncomplicated. This gives a death rate, in the latter, of approximately 10 per cent. In both of these fatal cases, the condition had been unrecognized and was of long duration and the jugular veins in each case were completely occluded. Of the twenty-one cases, the jugular vein was ligated in fifteen. There are certain errors of diagnosis if one relies upon the blood culture, as it is well known that cases of pneumonia, typhoid, endocarditis, etc., may give positive cultures where there is no lateral sinus thrombosis; and, on the other hand, many cases of lateral sinus thrombosis give negative blood cultures, as the thrombus may be a mural one and sterile.

DR. A. E. SMITH (Minneapolis): There was considerable sclerosis of the mastoid cells in the first case. Was there a history of ear trouble there?

DR. CAMP: No, there was no history of previous abscess.

DR. A. R. COLVIN (St. Paul): We have, at the Ancker Hospital at present, a man whom I saw twenty-seven years ago, with a condition due to sigmoid sinus thrombosis, which seems worth reporting as a discussion to Drs. Camp and Nordland's paper. When first seen by me, he was unconscious, with evidence of pyemia, i.e., suppurating knee and shoulder joints, abscess of his chest wall. He had a malodorous discharge from his right ear and although tender over the mastoid process there was neither swelling nor redness of this region; there was tenderness along the course of the internal jugular vein. On opening the vein, pus escaped and it was found that the pus was

in a section of the vein walled off by endophlebitis at about the middle of its course. On opening the mastoid, pus escaped; and on opening the sinus, pus also escaped. The knee and shoulder joints were drained of pus, as was the abscess in the chest wall. The patient recovered and is now in the hospital for other ailments.

The question of papilledema from venous obstruction, due to sinus thrombosis, was demonstrated in the case of a young woman who was suffering from severe headache and blindness, these dating back to a febrile illness of a year previously. She was operated upon by a colleague under the supposition that she had a brain tumor. At the operation, the bleeding from the bone was so profuse that death ensued. Autopsy revealed obliteration of all of the major dural sinuses, with here and there small pockets in the sinus at the entrance of the diploic veins. The thrombosis in this instance was due to infection not going on to suppuration; the blindness was evidently due to the long-continued venous obstruction.

The third case was a child of three years who was suffering from bilateral mastoid suppuration—neglected. The left mastoid cells were drained of pus and his condition improved. Shortly, however, it was necessary to drain the opposite mastoid. After this, however, his symptoms not improving, a diagnosis of sigmoid sinus phlebitis was made and of the right—last side operated. On opening this sinus, however, thrombosis was not found and it was necessary to pack it. Later he became suddenly unconscious and blind and finally a red streak appeared over the course of the internal jugular vein on the side of the first operation. The boy's condition was desperate but it was concluded that he had sinus and jugular vein thrombosis. On exposing the vein it was found to be adherent to its sheath, thus indicating at least a phlebitis. However, even if it were (because of the soft nature of the thrombus) impossible to say positively that the vein contained a thrombus, still all the other indications pointed to this and on opening the vein a clot extending from above and dichotomously extending into the subclavian vein was removed. Because of the child's precarious condition at this time the sinus was not explored through the old operative wound. However, the boy recovered. All the facial veins became dilated. This was twenty-six years ago and he is still living.

I report these cases as demonstrating the variable kinds and results of sinus thrombosis.

The meeting adjourned.

R. T. La Vake, M.D., *Secretary.*

Amendment of Council Decision, "Vitamin E Claims for Public Advertising"

The Council on Foods reports that there are at present no adequate scientific data establishing the role of vitamin E in human dietetics. The Council has ruled that neither the claims for vitamin E nor mention of the vitamin shall appear on food labels or in advertising addressed to the public; nor will such claims be recognized if they appear in advertising addressed to the profession if directly or inferentially such advertising recommends the use of the preparation because of its vitamin E content. (J.A.M.A., Oct. 17, 1936, p. 1303.)

BOOK REVIEWS

Books listed here become the property of the Ramsey and Hennepin County Medical libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

A Textbook of Medicine. Charles Phillips Emerson, M.D., Research Professor of Medicine, Indiana University, etc. 1,296 pages. Price, $8.00, cloth binding. Philadelphia: J. B. Lippincott Co., 1936.

Kama Sutra—The Hindu Science of Love. Mallinaga Vatsyayana. Translated from the Sanskrit by Sir Richard Burton. The Doctor as Marriage Advisor, by Max Hodan, M.D. 127 pages. Suede finish binding. New York: Medical Press of New York, 1936.

Synopsis of Ano-rectal Diseases. Louis J. Hirschman, M.D., F.A.C.S. Ex-Vice President A.M.A., Professor of Proctology, Wayne University, etc. 288 pages. Illus. Price, $3.50, flexible binding. St. Louis: C. V. Mosby Co., 1936.

Diseases of the Coronary Arteries and Cardiac Pain. Edited by Robert L. Levy, M.D. Professor of Clinical Medicine, College of Physicians and Surgeons, Columbia University, etc. 445 pages. Illus. Price, $6.00, cloth binding. New York: The MacMillan Co., 1936.

LOBAR PNEUMONIA AND SERUM THERAPY. Frederick T. Lord and Roderick Heffron. New York: The Commonwealth Fund, 1936.

The serum treatment of pneumonia has proved its value in reducing the mortality of Types I and II pneumonia by at least 10 per cent. It is, perhaps, too early to state the value of serum in the so-called higher types of pneumococcic pneumonia.

In New York and Massachusetts the states supply the profession with this serum for patients unable to pay the high cost, thus recognizing the importance of lobar pneumonia as a community problem and the value of serum in its treatment.

While the mortality of labor pneumonia in Minnesota is not so great as in the East, every practitioner and internist should be posted on the recent developments in the serum treatment of pneumonia. This includes typing; the contra-indication of serum therapy for those sensitive to horse dander, those who have recently had horse serum injections, those sick more than four days or moribund, or those showing a positive ophthalmic reaction; and the technic of serum injection itself.

This little gem of a book gives all this information in a nutshell and should be in the hands of every general practitioner and internist. Written by a professor of clinical medicine at the Harvard Medical School in collaboration with the Field Director of the Pneumonia Study and Service of the Massachusetts Department of Public Health, it represents clinical experience as well as intensive study of the important subject of pneumonia and its treatment.

C. B. Drake, M.D.

PHYSIOLOGY OF LOVE. By Paolo Mantegazza. Tr. from the Italian by Herbert Alexander. New York: Eugenics Publishing Company, 1936.

The author of this book was born at Monza, in 1831. After a distinguished career as a student at Pisa and Pavia, where he graduated M.D. with honors, he spent some time in postgraduate study in the various European centers and after a period of time spent in private practice and as a military surgeon he became professor of general pathology at Pavia, founding there the first laboratory of experimental pathology in existence. In 1869, he was called to fill the chair of Anthropology in the Istituto di Studi Superiori at Florence and while engaged in this work he also was instrumental in the foundation of the National Museum of Anthropology, whose seat is at Florence, and initiated the Italian Anthropological Society, with its official organ, the Archives of Anthropology and Ethnology. In 1902, with Lombroso, he instituted the Anthropometric Laboratory, in connection with the Museum, and on the occasion of the opening of this he was extended a widely accorded expression of regard.

He was a member of the Italian Parliament from 1865 to 1876, and later given the honorary office and title of Senator. As a writer he is best known for the three volumes which compose his Love Trilogy, of which the present volume, published in 1872, was the first, to be followed by the *Hygiene of Love*, in 1874, and *Mankind in Love*, in 1885. His expressed attitude toward divorce, prostitution, birth control and similar economic problems, stated at a time when these things were not even discussed, much less tolerated, aroused much violent opposition and efforts were made to deprive him of his teaching and political connections, but without success. He died in 1910, in his seventy-ninth year, one of the most important and honored figures in Italian public life.

This book is necessarily quite different from the average medical book. It deals with a tremendously powerful emotion, but one which cannot be measured by instruments or studied from the standpoint of organic change, consequently there are no dials to read, no tables to analyze and compare and no microscopic sections to interpret. It is wholly a study of imponderables with widely differing manifestations. It is a mistake, therefore, to assume that the book is only a philosophic treatise and nothing else. Love is a function and not merely a belief or a religion. The mere fact that we have as yet been unable to find its origin in any particular part of the brain or elsewhere does not deny its existence as a very potent entity. That simply tells us that the extent of our comprehension is circumscribed and that once again we have reached its limits.

The subject-matter of the book is very beautifully written and the work of the translator has been exceedingly well done. There is not an objectionable line in the whole volume, so far as the main part of it is concerned. One gains the impression that the chapter headings and the interpretative subheads are the work of another hand. They are more suggestive and pointed than what follows. If anyone has bought the book on the strength of these captions he is going to be disappointed. It is anything but a pornographic guide, but one might easily so expect to find it if one relied only on the table of contents.

We believe that a book of this type, competently prepared and understandingly read, should prove itself very useful. It considers and discusses critically the various psychic processes which enter into so many of the vexed problems of marital difficulty, and brings things to a practical conclusion in its last few chapters by a wealth of useful deduction. It can be read with profit by anyone who wishes to improve his own mind or his usefulness to others.

GILBERT COTTAM.

ARTHRITIS AND RHEUMATIC DISEASE. Maurice F. Lautman, M.D. 177 pages. Illus. $2.00. New York: Whittlesey House, 1936.

A volume written for the layman who wishes to understand the rationale of the treatment of rheumatism. For the physician it acts as a concise review of the subject of arthritis. The volume is written in language that the non-medical person can understand and is appropriately illustrated.

H. J. PRENDERGAST, M.D.

CHEMICAL PROCEDURES FOR CLINICAL LABORATORIES. Marjorie R. Mattice. 520 pages. $6.50. Philadelphia: Lea & Febiger, 1936.

The constantly increasing importance of bio-chemical procedures in determining variations in physiological function of the various organs, receives recognition in this valuable handbook. Embodying the newest methods of analysis of the body fluids and tissues, it discusses their normal constituents, discusses briefly their variations during disease, and in concise fashion describes the procedures used. Not the least valuable chapters are those included in the appendix, particularly the very convenient "résumé of normal data," as well as those describing the preparation of solutions and re-agents.

Certainly this book represents an important contribution to the library of anyone interested in laboratory medicine.

THOMAS MYERS, M.D.